



The Economic Consequences of Internal Displacement in Zimbabwe

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Key Words

Internal Displacement, Mining, Economics, Pareto optimality, Economic Consequences, Social Capital, Economic Activities, Rational choice, Life Satisfaction, Temporal Satisfaction with Life, Arda Transau, Zimbabwe

Dedications

To my beloved, beautiful and hardworking wife, Patience, intelligent and beautiful daughters, Pretty R., Wadzanai and Takudzwa and finally, my hardworking mother, Joyce.

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Declaration

I declare that *The Economic Consequences of Internal Displacement in Zimbabwe* is my work, that it has not been submitted for any degree or examination in any other University and that all the sources I have used or quoted have been indicated and acknowledged by references.

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Original Papers

The papers listed below were extracted from the Doctoral thesis. Therefore, the Doctoral thesis is an enhancement of these papers:

1. Mandishekwa, R., and Mutenheri, E. (2020). The economic activities among mining-induced displacees in Arda Transau, Zimbabwe, *Mineral Economics*, Springer-Verlag GmbH Germany, <https://doi.org/10.1007/s13563-019-00215-1>
2. Mandishekwa, R., and Mutenheri, E. (2020). Mining-Induced Displacement and Resettlement: An Analytical Review, *Ghana Journal of Development Studies*, Vol.17, No.1, pp. 114-140, DOI//<http://dx.doi.org/10.4314/gjds.v17i1.6>
3. Mandishekwa, R., and Mutenheri, E. (2019). Quantification and modelling life satisfaction among internal displacees in Arda Transau, Zimbabwe, *International Journal of Happiness and Development*, Vol. 5, No. 4, pp. 298-327
4. Mandishekwa, R., and Mutenheri, E. (*forthcoming*). The economic consequences of internal displacement in Zimbabwe, *International Journal of Migration and Border Studies*, DOI: 10.1504/IJMBS.2020.10031095
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Conference Presentations from the Thesis

The following papers were extracted from the thesis and presented at the stated conferences.

1. The economic activities and coping strategies of Arda Transau displacees, *Paper presented at the Midlands State University Conference on Sustainable Economic Transformation, Innovation and Governance in Emerging Economies, 6-8 February 2019.*
2. The possible interlinkages among internal displacement consequences, economic activities of the displaced and the displacees' life satisfaction, *Paper presented at the Midlands State University Conference on Sustainable Economic Transformation, Innovation and Governance in Emerging Economies, 6-8 February 2019*
3. The economic consequences of internal displacement in Arda Transau, Zimbabwe, *Paper presented at the 8th KESSA-AISA-Multimedia University, International Interdisciplinary Conference on Development from below and from above in Africa held at Multimedia University of Kenya, 27-30 June 2018.*
4. Quantification and modelling the determinants of life satisfaction among internal displacees in Arda Transau, *Paper presented at the 8th KESSA-AISA-Multimedia University, International Interdisciplinary Conference on Development from below and from above in Africa at Multimedia University of Kenya, 27-30 June 2018.*
5. Gender and economic consequences of internal displacement, *Paper presented at the Great Zimbabwe University International Conference on Breaking the Nexus between Gender and Poverty at Elephant Hills Hotel, Victoria Falls, Zimbabwe, 15-16 May 2017.*

Abstract

The Economic Consequences of Internal Displacement in Zimbabwe

Background: Internal displacement occupies a central place among population displacements especially in Africa where Internally Displaced Persons (IDPs) have outnumbered refugees, hence, the term Africa's new dilemma. Africa has also become a host to two-thirds of the world's IDPs. With the increasing demand for minerals, mining-induced displacement has taken a centre stage among development projects. Despite the increasing trend in the number of IDPs, few studies have focused particularly on economic consequences of mining-induced internal displacement, yet mining-induced displacements cannot be ruled out given the ongoing explorations and increasing demand for minerals as a result of population growth. Furthermore, there is scant literature on economic activities and satisfaction with life among displacees. IDPs have, therefore, remained the forgotten group, both in literature and in policy issues. To contribute to the literature, the thesis explored the economic consequences of mining-induced displacement, determinants of the choice of economic activities and determinants of satisfaction with life among IDPs in Arda Transau, Zimbabwe.

Objectives: The thesis firstly aimed to explore the economic consequences of mining-induced displacement in Arda Transau. Since internal displacement is associated with livelihoods change; the thesis also aimed to find determinants of IDPs' choice of economic activities. Finally, the other objectives of the thesis were to quantify life satisfaction levels since displacement has the potential to change life satisfaction and to determine the correlates of life satisfaction among internal displacees in Arda Transau.

Methods and results: A total of 274 household heads in Arda Transau, selected using stratified systematic sampling, was interviewed. Proportional sampling in locations was also used for representativeness. For the economic consequences of internal displacement, categorical variables were mostly analysed using Stuart-Maxwell and McNemar's tests, while Wilcoxon Matched Pairs Signed Ranks Test was used to analyse continuous variables. The findings indicate that IDPs have lost significantly in terms of employment, land, income and animals, among other losses. For the determinants of the choice of economic activities, the multinomial logit results show that the gender of household head, pre-displacement economic activities of the household and marital status of the household head are significant

determinants of the choice of current major economic activity. On satisfaction with life, the findings from the ordered logit model indicate that current life satisfaction is significantly determined by household size, social capital and neighbourhood characteristics. It was also found that social capital, perceived health and neighbourhood characteristics significantly determine future life satisfaction among IDPs in Arda Transau. Overall, current life satisfaction score was found to be generally average but slightly lower than the pre-displacement score.

Conclusions: Mining-induced internal displacement has been found to negatively affect the displaced households economically thereby leading them to engage in coping strategies in a bid to maintain a certain level of life satisfaction. Perceived from the livelihoods approach, the losses can be said to have made households more vulnerable to livelihood shocks. Therefore, displacement has led to the creation of new poverty. It can also be concluded that social capital plays a significant role among IDPs as indicated by results which show that it significantly determines the choice of coping strategies and life satisfaction. Therefore, the social capital loss has detrimental effects on IDPs' lives.

Recommendations: Life-changing events such as internal displacement have detrimental effects in terms of economic losses, therefore, significant efforts must be made to minimise these losses. Other significant effects found were changes in economic activities and life satisfaction, therefore, there is a need to minimise these effects since a happy society is a productive society. To mitigate these losses, governments are encouraged to make efforts to minimise displacements. To maintain or improve economic productivity, there is a need to improve life satisfaction despite displacement. It is also recommended that IDPs need to avoid erosive coping strategies but engage in sustainable livelihoods.

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List of Abbreviations and Acronyms

ADHD.....	Attention-Deficit Hyperactivity Disorder
C.A.R.....	Central African Republic
DID.....	Development-Induced Displacement
DIDR.....	Development-Induced Displacement and Resettlement
FTLRP	Fast-Track Land Reform Programme
GoLogit.....	Generalised Ordered Logit
HILDA	Household Income and Labour Dynamics in Australia
IIA	Independence of Irrelevant Alternatives
IDMC.....	Internal Displacement Monitoring Centre
IDP	Internally Displaced Person
IRR.....	Impoverishment Risks and Reconstruction
MDC.....	Movement for Democratic Change
MIDR.....	Mining-Induced Displacement and Resettlement
MNL.....	Multinomial Logit
NRC.....	Norwegian Refugee Council
Ologit.....	Ordered Logit
RCT.....	Rational Choice Theory
SADC.....	Southern African Development Community
SASCAT.....	Short Adapted Social Capital Assessment Tool
SWB.....	Subjective Well-Being
SWL.....	Satisfaction With Life

SWLS.....Satisfaction With Life Scale

TSWLS.....Temporal Satisfaction With Life Scale

ZANU-PFZimbabwe African National Union-Patriotic Front

ZCDC.....Zimbabwe Consolidated Diamond Mining Company

CHAPTER ONE: INTRODUCTION

1.1 Introduction

Physical population displacement has become an increasing challenge in many countries (Owen & Kemp, 2015) and during the 1980s the study of forced migration gained greater recognition (Harrel-Bond & Voutira, 1992). Research interest on the risks associated with forced migration has been increasing for more than two decades now with internal displacement occupying a central place (Cernea, 1995a; 1996; 2000; Engel & Ibanez, 2007; Fiala, 2012; Owen & Kemp, 2016), especially in Africa (Lwabukuna, 2011; Maru, 2011; Ferris, 2012), resulting in what has become known as Internally Displaced Persons (IDPs). A phenomenal increase in IDP statistics in Africa led Lwabukuna (2011) to conclude that IDPs are the new African dilemma. Again, Opukri and Ibaba (2008) also noted that internal displacement is one of today's human tragedies.

Surprisingly, no universal definition of IDPs exists so far (Mooney, 2005). For example, IDPs are defined as those people who were forced to migrate but do not cross recognized international borders (IDMC, 2008). On the one hand, the United Nations Guiding Principles on IDPs (UN, 2004, p.1) define IDPs as

...persons or groups of persons who have been forced or obliged to flee or to leave their homes or places of habitual residence, in particular as a result of or to avoid the effects of armed conflict, situations of generalised violence, violations of human rights or natural or human-made disasters, and who have not crossed an internationally recognised state border.

On the other hand, Mooney (2003, p.159) view IDPs as "...internal refugees ...". Mooney (2005) gives a wide range of definitions of IDPs but accepts that the internal displacement concept is very broad. Of note is that the definitions by Mooney (2003), UN (2004), and IDMC (2008) dovetail into each other by way of stating that the IDP must not cross an internationally recognised border. An additional definition of IDPs is given by Opukri and Ibaba (2008) who define IDPs as aliens in their communities. Although the word community may be context-specific, the definition of IDPs by Opukri and Ibaba (2008) seems to infer that IDPs are a result

of displacement *in situ*, where IDPs only move a few kilometres from their habitual residence implying co-habitation between IDPs and those who displaced them, for example, mining companies. While the definitions by IDMC (2008) and UN (2004) seem to connote that IDPs do not cross internationally recognised borders, the one by Opukri and Ibaba (2008) is silent about crossing international borders. However, it seems logical to accept that the definition by Opukri and Ibaba (2008) implies not crossing international borders as deduced from the word ‘internal’. Therefore, from the above definitions, the definition of IDPs remains somehow equivocal although it seems acceptable that IDPs are forced migrants who do not cross internationally recognised borders. The conclusion that the definition of IDPs remains debatable seems to concur with Opukri and Ibaba (2008) who indicated that existing definitions of IDPs are narrow.

With no existing universal definition of IDPs, no accurate statistics on IDPs also exist (UN, 2011; Abdulai, 2016), but the approximate statistics are alarming with millions of people being displaced each year. Available estimates indicate that the number of IDPs has increased astronomically over the years (Hoshour & Kalafut, 2007; IDMC, 2020). In 1997, 17 million people were displaced (Bozzoli *et al.*, 2011) while the figure rose to 21.8 million in 2002 (United States Committee for Refugees (USCR, 2002)). Bozzoli *et al.* (2011) estimated that 27.5 million individuals were displaced in 2010, the United Nations High Commission for Refugees (UNHCR, 2010), however, estimated that 44 million people had been displaced worldwide the same year. During 2015 alone, 27.8 million new displacements in 127 countries occurred (IDMC, 2016) while in 2017, a total of 30.6 million new displacements were recorded with 39% being attributed to conflict and violence, and 61% was a result of disasters (IDMC, 2018). At the end of 2017, at least 40 million people remained internally displaced. The figure increased to 41.3 million with a total of 28 million new displacements as of 2018 (IDMC, 2019). Again, for 2019, new displacements increased to 33.4 million which is the highest figure since 2012 (IDMC, 2020). Additionally, IDMC (2020) claimed that the upward trend in IDP statistics is likely to remain for a long time.

In recent years, IDPs have been found to outnumber refugees. For instance, in 2009, 42.3 million people were displaced with 15.2 million being refugees while 27.1 were IDPs (Harild & Christensen, 2010). In Sub-Saharan Africa, next to 11 million people were internally displaced

compared to two million refugees as of 2010 (Ferris, 2012). Additionally, the Social Development Notes (2009) estimated that there were between 570 000 and one million IDPs in Zimbabwe compared to 16 841 refugees as of 2008. All these statistics confirm the observation that IDPs outnumber refugees (Cohen, 2000; Maru, 2011; NRC, 2017). From the IDPs' statistics, even though they are estimates, the extent of displacement can be considered to be high, hence, the need for something to be done about these displacements. What needs to be done depends on understanding the causes and consequences of displacement, associated economic activities and satisfaction with life among IDPs.

Statistics on IDPs also indicate that the majority of IDPs live in Africa. While IDMC (2011) states that 40% of IDPs live in Africa, Maru (2011) indicates that more than 50% of all IDPs in the world are in Africa. The Norwegian Refugee Council (NRC, 2017) was more specific than Maru (2011) by stating that two-thirds of all IDPs are in Africa. Again, Africa remained the main host of IDPs in 2018 by hosting 69% of all conflict-induced IDPs (IDMC, 2019). Therefore, there seem to be an upward trend in IDP figures in Africa and the world as a whole. Moreover, Ferris (2012) noted that Africa has more IDPs than refugees and, hence, Lwabukuna (2011, p.131) termed it the "... new African dilemma". One of the most probable reasons for Africa hosting the highest number of IDPs is that the majority of projects that lead to population displacement have been undertaken in Africa. For instance, dams such as Lake Kariba between Zimbabwe and Zambia, Tokwe-Mukosi Dam in Zimbabwe, Merowe Dam in Sudan, Akosombo, Kpong and Bui Dams in Ghana, Aswan High Dam in Egypt, Kainji Dam in Nigeria, and Cabora Bassa Dam in Mozambique, to mention but a few. Surprisingly most of these dams and projects (Cernea, 1997b; 2003), which amount to about 350 dams between 1970 and 1997 (Cernea, 1997b), were funded by the World Bank Group, yet it is one of the first institutions to argue against population displacement (Cernea & McDowell, 2000). Perhaps the World Bank Group managed to find the problems associated with its funded activities, hence, its establishment of the guidelines on internal displacement such as those outlined in the World Bank 2004 publication.

In terms of the associated causes of displacement, it is increasingly becoming difficult to ignore conflict as a significant cause of displacement. Individuals have often been displaced from their places of habitual residence because of conflicts (violent and non-violent) and or development

projects. For instance, Boko Haram in Nigeria has led to the displacement of 1 782 490 individuals as of 2017 (KNOMAD, 2018). In 2014, 38 million people worldwide lived outside their homes as internal displacees due to conflict and violence of which 11 million were newly displaced during that year (IDMC, 2015a). For 2015 alone, according to IDMC (2016), several millions of people, Yemen, 2.2 million; Syria, 1.3 million; Iraq, 1.1 million; Nigeria, 0.7 million; and DRC, 0.6 million; have been subjected to conflict-induced displacement. Syria topped the list with 2.9 million new displacements while DRC was second with a total of 2.2 million people being displaced in 2015 (IDMC, 2018). In Zimbabwe, violent conflicts have also caused the displacement of individuals with several of such cases having been reported during the run-up to the 2008 presidential elections re-run (IDMC, 2011) where an estimated 36 000 people were displaced (IDMC, 2015a). However, IDMC (2011; 2015a) noted that most of the 2008 IDPs have returned to their homes. These statistics speak volume about the intensity and severity of mass population displacements experienced during the current century.

Mining activities, just like other development projects, have been found to displace a significant number of people worldwide. About 2.55 million people were displaced in India during the period 1950 to 1990 (Downing, 2002; Hoadley, 2008). Between 2009 and 2014, 2000 families were displaced by mining companies in Mozambique (Adeola, 2017). Terminski (2012), Aboagye (2014), Terminski (2013) and Adeola (2017) noted that mining activities uprooted 30 000 people in Ghana between 1990 and 1998, while in Sierra Leone, Adeola (2017) indicates that 4 537 people were displaced to allow mining to take place. Terminski (2012) claimed that a huge number of households has been displaced in Zimbabwe as well, to pave way for mining. It has also been noted that after relocating 366 households, 265 graves were relocated in Zvishavane, Zimbabwe, to give way to diamond mining (Terminski, 2012). For the case of Chiadzwa¹ diamonds, Termiski (2012) noted that the Government of Zimbabwe in 2009 announced a plan to resettle 4 700 villagers. However, as of 2016, according to Mutare District Administrator's office, 930 households had been relocated.

¹ Chiadzwa is the place from which IDPs in Arda Transau were relocated from.

With the current wave of new explorations being undertaken in Zimbabwe and globally as a result of increased demand for minerals (Ericsson, 2019), the numbers of mining-induced IDPs are likely to increase. Also, in Africa, Zimbabwe is among the countries with significant mining-induced displacements (Terminski, 2013). Therefore, the economic consequences of mining activities need to be known beforehand. These economic consequences necessitate reorganisation of economic activities and possible subsequent changes in satisfaction with life (SWL), hence, the need for this thesis to unravel these aspects. Aside from mining-induced displacement, Zimbabwe is among the top fifty countries with the highest IDP numbers for 2019 (IDMC, 2020).

The main result of physical population displacements is a situation where individuals flee to either neighbouring countries giving rise to refugees, or surrounding areas without crossing national boundaries, resulting in them being labelled IDPs. However, development-induced displacement rarely leads to international migration but internal displacement. The resultant effects of displacements are; joblessness, landlessness, marginalisation, food insecurity, social disarticulation or disintegration and homelessness, among others (Cernea, 1995a; 1995b; 1996; 1997a; 1999; 2000). Despite the negative consequences, development projects also have benefits such as improved road networks and at times clinics and schools are constructed within surrounding areas. Therefore, IDPs may be relocated closer to these amenities, to their advantage, as noted by Cernea and Schimdt-Soltau (2003) and Vanclay (2017). With the losses, come possible changes in economic activities requiring IDPs to use coping strategies. The coping strategies are meant to minimise the effects of risks associated with displacement. These coping strategies can also help improve life satisfaction among displaced individuals.

While some disasters may be unavoidable, most development-induced displacements (DIDs) may be avoided. Disasters, such as cyclones, may be unavoidable although their impact may be minimised by preparedness and taking precautionary measures. With DID, most projects, if well evaluated, can be avoided from the onset. Most arguments underlying DID, say mining-induced displacement and resettlement (MIDR), is a result of the need to tap the potential economic growth underground. However, the consequences mostly turn out to be disastrous, with 'resource curse or paradox of plenty' (Karl, 1999; Basedau & Lacher, 2006; Jones, 2008; Leibbrandt &

Lynham, 2017) being prominent in mining countries. In brief, the paradox of plenty claims that natural resource abundance reduces economic growth (Sachs & Warner, 1995; Jones, 2008).

Development-induced displacement takes place when people are uprooted to pave way for development projects such as dams, roads, conservation and mining, among other development projects. All these activities are justified based on expected gains from the projects despite the costs on the displaced people. From the perspective of neoliberal economics, the benefits accrued from displacing people may be in terms of income generation and economic growth through exports as espoused by Agbley (2019). One thing, however, has to be noted: Trickle-down economics has its drawbacks, for example, growth measured by GDP, on its own does not benefit all. Again, the trickle-down notion may lead to inequality (Stiglitz, 2016). Only in some East Asian Tigers was growth attained accompanied by decreasing inequality (World Bank, 1993). As such, growth envisaged by displacing people may not necessarily be welfare improving but, as predicted by Pareto optimality, be biased in that some people will be made worse off after project implementation. Therefore, Sen (1999) noted that even if a proportion of a cake is continuously taken away from the poorest person of the society and shared among the richer group to achieve what he termed majority "improvement", the way of achieving the improvement only² works, given that the social justice is by majority rule, despite victimising someone. Of note is that the neoliberal claim is not that people-centred because it focuses less on the impact of the development project on IDPs, yet Cernea (1994, p.83) notes that "It is essential for successful implementation of development projects to 'put people first'", with 'putting people first' being a term coined to Cernea's (1985; 1991) editions of a World Bank publication. Similar arguments may be deduced from Chambers (1995) who noted that the reality of the poor people must be put first and must count in development summits. Again, Nayak (2000) noted that people-centred approaches are essential in resettlement studies. Also, Risse (2004) pointed out some weaknesses associated with majority rule-based decisions, such as the ones advocated for by neoliberal economics.

² Own emphasis

One such objection to the majority rule observed by Risse (2004) is the objection from proportionate consideration. In the context of this study, the objection from proportionate consideration means that, because the people to be displaced are less than the national population which is likely to benefit from the mining activities, if majority rule is applied these people will still be displaced. This is because the IDPs are fewer in number and yet proportionate consideration is ignored. If proportionate considerations were to be applied, there may be no mining-induced displacements at all. The refusal to use proportionate consideration is considered unfair by the people who are displaced although those who would benefit from mining-activities, who happen to be more than the IDPs, will not take it that way.

The majority 'improvement' view of development-induced displacement seems, to some extent, to be in line with the Kaldor-Hicks efficiency criterion, popularly known as the British approach to welfare economics according to Baujard (2013), but can also be seen to be mainly in contrast with the Pareto optimality criterion. To start with, Pareto optimality postulates that an action or project cannot improve someone's welfare without affecting another person's welfare (Arrow, 1948; Baujard, 2013). Therefore, a nation or any actor that displaces people for developmental reasons must know that it is impossible to improve national social welfare, derived from the project's benefits, without affecting other concerned individuals, implying that IDPs lose to pave way for benefits to be extended to the nation as a whole. Therefore, Kanbur (2002, p.3) noted that "... "Pareto improvement" ... vests individuals with infinite rights in their current standard of living ...". Thus, because of changes in living standards among the displacees, development-induced displacement becomes a problem if project costs are externalised to the displacees as noted by Downing (2002). Also, it has been noted that it is nearly impossible for any project to be undertaken without making at least one person's welfare worse off (Idisi, Ogwu & Zorto, 2018). Because of the potential losses in welfare, development projects that lead to displacement usually face resistance leading the government, in most cases, using its power of eminent domain to force resettlement on the households. However, some of the major weaknesses of Pareto optimality are its lack of interpersonal comparison of utility and its silence on the distribution of utilities (Sen, 2008).

Contrary to Pareto efficiency criterion, the Kaldor-Hicks criterion, or what Sharma, Giri, Haque and Tetteh (2018) call the Pareto-preferred outcome, argues that a welfare improvement will only occur if the losers consider their losses to be less than what is considered as gains by the winners (Kanbur, 2002; Mathis & Steffen, 2015; Sharma, Giri, Haque & Tetteh, 2018). Kaldor (1939), Kanbur (2002), Ellerman (2014), Sharma, *et al.* (2018) and Idisi, Ogwu and Zorto (2018) claim that if gainers say from the project, can hypothetically compensate losers, there will be a potential Pareto improvement (PPI), meaning the Kaldor-Hicks criterion is satisfied. That winner can hypothetically compensate losers, and the winners remain better off, is considered to be a potential Pareto improvement which is justified on grounds of efficiency. However, the winners must remain with some net benefits after the transfer for the criterion to hold. One other tenet of the Kaldor-Hicks criterion is that losers must not bribe winners not to undertake the project (Hicks, 1939; Jones, 2005). The Kaldor-Hicks conclusion, however, is difficult to reach considering that usually losses are given higher weights by affected individuals than expected gains (Pearce, 1999; Stiglitz, 2018), thereby being consistent with the rational individual idea and the adage 'a bird in hand is worth ten in the bush'. Thus, the promised benefits from the project are viewed as less valuable to what households, who are uprooted, may currently have. Ellerman (2014) states that the Kaldor-Hicks efficiency criterion has been widely used in applied welfare economics. However, in the case of IDPs, some may count on their benefits from the project and, therefore, conclude that they have benefitted, for instance, by being relocated to a more fertile land area, a conclusion which may be arrived at after a certain duration of stay in the post-displacement area. Conclusively, there seem to be two conventional contrasting criteria from welfare economics. The Kaldor-Hicks criterion seemingly supports displacement, by arguing that, if and only if, winners can potentially compensate losers and remain better off, displacement can take place, while the Pareto efficiency criterion seems to irrefutably dispute forced resettlement basing its arguments on the associated consequences. Of note is that Pareto optimality does not necessarily pay attention to potential compensation, unlike the Kaldor-Hicks criterion.

In addition to the Pareto optimality condition and Kaldor-Hicks criterion, the attribution theory by Heider (1958) also notes that individuals are accurate in attributing causes to effects. Thus, IDPs may be considered accurate in reporting the consequences of displacement. Also in line

with this theory, but referring directly to life satisfaction, Ferrer-i-Carbonell (2013, p. 35) had this to say, “[t]here is enough evidence to be confident that individuals are able and willing to provide a meaningful answer when asked to value on a finite scale their satisfaction with their own lives...”. In short, it may be stated that Ferrer-i-Carbonell (2013) says people are accurate in estimating or evaluating an issue to do with their life thereby possibly asserting the convictions of the attribution theory. Therefore, relying on the attribution theory, the thesis claims that economic losses, changes in economic activities and changes in life satisfaction among IDPs are attributed to displacement. This line of thinking was also motivated by the statement by Downing (2002, p.14), referring to costs associated with project-induced displacement, that “... if the costs would not have accrued without the project, then they are project costs ...” which again seems to assert the attribution theory. The statement by Downing may again be taken to imply the expectations of the Pareto optimality criterion which, in this study, mean the consequences of displacement may make displacees worse off to make the nation at large better off.

A troubling aspect of development-induced displacement is its general approval in several parts of the world, particularly in developing countries. Thus, various reasons have been given to justify displacement. One such justification is potential economic development; giving rise to development-induced displacement. In this case, mass population displacement is justified as a means to pave the way for development projects to be undertaken thereby following the claims by neoliberal economics for land acquisitions. Therefore, Namutebi (2017, p.57) highlighted that “[m]ining is one of the prolific activities geared towards poverty eradication...” meaning that nations at large can be better off despite displacees losing out. By being better off, the nation can hypothetically compensate the displaced persons, thus complying with the Kaldor-Hicks efficiency criterion (Gowdy, 2003; Idisi, Ogwu & Zorto, 2018). In such instances, the greatest good or happiness for the majority argument, by Bentham (1823) and his followers like Mill (2001), is claimed to hold, whereby the projects are justified on the basis that they will benefit the majority even though the minority will be affected negatively (Mburugu, 1994). The negative implications of this policy action resemble the example given by Sen (1999) that taking a proportion of a cake from someone to enhance the majority's welfare does not always improve total welfare. In the sense of the good for the majority argument, Etzioni (2014) refers to it as communitarianism; where communitarianism speaks about morals in a society. Thus, on moral

grounds, the mining-induced displacement may not be justified because everyone's happiness counts equally.

Surprisingly, despite all the above arguments, little is currently known about mining-induced displacement's economic consequences and its associated changes in economic activities and satisfaction with life (SWL), possibly because there have been few or no follow-ups on how the IDPs are surviving. Literature has it that displacement leads to several losses (Cernea, 1995a; 1997a; 2000; 2003) and that households are likely to employ coping strategies to survive (Barbelet, 2017; Abraham, Lien & Hanssen, 2018). Questions that one may ask about economic activities among IDPs are a) How do these IDPs make a living while they suffer from these economic consequences of displacement? b) What determines the choices of use of each of the coping strategies? For example, with Arda³ Transau displacees having been given a hectare of arable land, the expectation was possibly that the coping strategies are likely agricultural activities. However, given the size of land and the experience in certain economic activities acquired in Chiadzwa, agriculture may not be the major activity.

Besides economic activities, displacement is most likely to affect satisfaction with life (SWL). Possible explanations of this link are Pareto and Kaldor-Hicks criteria and the attribution theory. One other reason is that displacement is a stressful life-changing event thereby potentially reducing happiness among displacees. Again, because of the possible changes in economic activities, satisfaction with life may change. Therefore, there is the probability of loss of a very important asset in life called genuine wealth with genuine wealth being defined as SWL. However, what determines SWL after displacement remains little known. With the set-up in Arda Transau, where certain amenities were availed before relocating people, potential life satisfaction changes remain ambiguous given the probability that some IDPs may be happy while others may report being unhappy with the neighbourhood characteristics. Thus, as propounded by Bergson (Baujard, 2013) neighbourhood characteristics improve social welfare with one possible explanation for that being the fulfilment of basic needs such as safety needs (Maslow, 1943; Doyal & Gough, 1991; Ventegodt, Merrick & Andersen, 2003).

³ Arda stands for Agricultural and Rural Development Authority. Arda Transau is a former government-owned farm currently occupied by IDPs from Chiadzwa.

Despite the scarcity of literature, it can be argued that with the increasing global population, increased demand for minerals and metals is inevitable in mining countries (Ericsson, 2019; Ericsson & Lof, 2019) since mining is considered to be “...one of the prolific activities geared towards poverty eradication...” (Namutebi, 2017, p.57). In Africa, and Eastern and Southern Africa in particular, mining is a significant contributor to economic activities (ANSA, 2006; Loewenson, Hinricher & Papamichail, 2016). Additionally, Ericsson and Lof (2019) noted that Zimbabwe’s mining sector contributes significantly to the economy, hence, classified the country as a mining country. Also, in Zimbabwe, mining is very important in that it contributes a significant proportion to Zimbabwe’s GDP (Ministry of Finance and Economic Development, (MoF), 2013, 2014, 2015, 2016) having contributed 8.5%, in 2009, 47% in 2010 (MoF, 2010) and an average of 45.5% between 2009 and 2011 (MoF, 2012), 8.5% in 2017 and 6.1% in 2018 (MoF, 2017) with estimates showing that by 2020, mining will contribute 8.9% of Zimbabwe’s GDP. Mining is also expected to be a major contributor to export earnings (Kanyenze, *et al.*, 2011). Having contributed 52% and 25.2% to Zimbabwe’s export earnings in 2014 and as of October 2017, respectively (MoF, 2014, 2017), the claim by Kanyenze *et al.* (2011) seems valid. Ericsson and Lof (2019) also noted that like in many African countries, mining played a significant contribution to national development between 1996 and 2016 in Zimbabwe as displayed by the size of the revised Mining-Contribution Index (MCI). With this in mind; it means that the increasing demand for minerals noted by Ericsson (2019) and Ericsson and Lof (2019) is likely to lead to increased explorations in Zimbabwe since the country is a mining country, especially in the current era as was earlier found by Namutebi (2017) and, therefore, necessitate the relocation of households in Zimbabwe thereby exacerbating the effects of mining activities on displaced households’ livelihoods.

Knowing internal displacement's consequences, its effects on economic activities and satisfaction with life, among IDPs, is important for different reasons. Firstly, resettlement policy formulation must consider not only relocation but its effects on the displaced for rehabilitation purposes. Thus, since no resettlement policy, as of now, exists in Zimbabwe, its formulation, should it be done, must have the consequences in mind. Ignoring the displaced persons in relocation discussions and policy issues mean that inclusive growth is a nightmare. Secondly, development projects are meant to improve the lives of citizens, and therefore happiness, but if they lead to

displacement without rehabilitation, because of increased vulnerability, it becomes a problem. Therefore, finding out the economic consequences of internal displacement enables an in-depth understanding of a development-led approach to displacement.

1.2 Background of the Study

To get an overview of the study at hand, the background of the study given here highlights the problems emanating from development-induced displacement and resettlement (DIDR). This background is divided into three main sections as; background on economic consequences of internal displacement, background on economic activities and another one on satisfaction with life among forced migrants. Thus, while Section 1.2.1 presents background on the economic consequences of mining-induced displacement, Sections 1.2.2 and 1.2.3 present the background on economic activities and satisfaction with life, respectively.

1.2.1 The Consequences of Internal Displacement

The literature on consequences of internal displacement is vast but little has been written specifically on the economic consequences especially the mining-induced displacement consequences. The majority of existing literature is from anthropological perspectives such as the vast writings of Cernea which date back to the 1980s. Such anthropological perspectives centred mainly on social consequences of displacement such as social marginalisation. Also, Cernea's model focuses on equity, human rights and social justice (Vivoda, Owen & Kemp, 2017a). Despite the calls by Cernea (1995a; 1999; 2003) and Caspary (2007) to economists to come into the displacement debate, scant literature on this aspect still exists even though internal displacement is an economic issue. Cernea (1999a, p.1) noted that

[h]istorically, the disciplines that have most explored resettlement processes and have informed resettlement policy and operations have been social anthropology and sociology. ... the anthropological analysis of resettlement has remained somehow isolated and insufficiently complemented by parallel inquiry in the economic disciplines.

Caspary (2007, p.73) goes on to say “[g]iven the high stakes, the lack of basic research by professional economists on population displacement is surprising”. It may be concluded from

this statement that since Caspary was writing about development-induced displacement, the assertion implies that development economists failed to recognise their role in this phenomenon. This lack of research by professional economists creates a gap in the literature as also noted by Cernea (1999a). Cernea (1999a, p.2) concluded that “...involuntary resettlement programs need to be better informed by economic research and theory...”. This void in the economic analysis of displacement studies gave impetus to the current study.

Moreso, consequences of mining-induced displacement have been under-researched despite vast research on other development-induced displacements and conflict-induced displacements worldwide. Although Zimbabwe is among the most well-known examples of mining-induced displacement (Terminski, 2012; 2013), currently few studies if any, particularly on economic consequences of mining-induced displacement has been done despite having numerous studies on dams, for instance, Hughes (2006), Cernea (1997b) and Mashingaidze (2012). Therefore, the current research intends to explore the economic consequences of mining-induced internal displacement using the case of Arda Transau IDPs. The study site is of interest because rarely have people been displaced and be provided with housing except in IDP camps or refugee camps. In Arda Transau, IDPs have been allocated houses and a hectare of arable land. This was done in a bid to rehabilitate the displacees through the provision of housing and possible agricultural-related economic activities. Therefore, a compensation-like model, of 'land for land', has been used, however, without due consideration of whether the one hectare given equates to the size previously owned and improvements that had been done at the previous site. Furthermore, Arda Transau is unique in that a clinic and a school have also been built for the IDPs before displacement. Additionally, some of the IDPs now have reticulated water at their homes. Thus, unlike in other cases of displacement where households find themselves further away from many social amenities, in Arda Transau, some are closer to some amenities than before displacement. For more on Arda Transau displacements, refer to Section 1.2.5 of this thesis under Chiadzwa diamond fields displacements.

Additional interest in this study arose from the observation by Cernea (1996a) that the consequences vary with local circumstances. This argument implies that case studies remain crucial in the internal displacement studies as also alluded to by Cernea (1995a) and Oucho (2005). The same sentiments were also echoed by Bilak *et al.* (2016, p.66) who stated that

“[q]uantifying the economic costs of displacement across different countries and context would make a compelling case to governments and policy-makers for incorporating responses into their longer-term development plans”. Thus, the local circumstances surrounding Zimbabwean mining-induced IDPs might be unique from those in other countries thereby deserving particular attention.

Population displacement comes in various forms, some of which include conflict-induced and development-induced displacement. On the one hand, conflict-induced displacement emanates from people being displaced because their place of habitual residence is under attack. Under conflict-induced displacement, people fear for their lives hence flee the place. These displacees may cross international borders thereby becoming refugees or may remain within their country giving rise to internal displacees. On the other hand, development-induced displacement arises from the displacement of individuals to pave the way for development projects. This again can result in the displaced becoming refugees or internal displacees depending on whether they cross international boundaries or not. However, crossing international boundaries because of development-induced displacement seems to be rare because the displaced are forcibly relocated by those who want to engage in the development project.

In terms of the consequences of forced migration, Cernea has done several studies iterating the effects of displacement from an anthropologist's perspective. Such works resulted in the famous Impoverishment Risks and Reconstruction Model (IRR) by Cernea (1995a; 1995c; 1996a; 1996b; 1997a) which identifies about eight risks associated with displacement which in brief are: landlessness which involves expropriation of land from the households, joblessness (may be fully-fledged or not) whereby households lose their wage employment due to forced migration, homelessness in which IDPs lose their homes and shelter. Additionally, marginalisation crops up and may be economic or social marginalisation which results in a drop in social status. Marginalisation coupled with landlessness may lead to the other consequence namely food insecurity whereby the household will not be able to meet its daily food needs or may be anxious about its food adequacy over a certain period usually a year. Increased morbidity and mortality is usually inevitable as households may be subjected to social stress, insecurity and trauma, among others. The last group of consequences are the loss of access to common property and social disarticulation. From an economics perspective, social disarticulation is simply the loss of social

capital while the loss of access to the common property is akin to the loss of access to some impure public goods. Social capital is understood in short as social assets within the sustainable livelihoods framework literature (May, Brown, Cooper & Brill, 2009). Common property resources are meant to improve the welfare of the community as a whole. From the morbidity and mortality consequences perspective, Doliashvili and Buckley (2008) found that displacement was associated with the pelvic inflammatory disease among Georgian IDPs. Although the IRR model was originally propounded from the anthropologist's perspective with the focus being mainly on equity, human rights and social justice, the current study strongly hinges on the model even though it is viewed from an economics side.

From an anthropological perspective, the consequences of forced migration are well-articulated but from an economics side much still has to be done with Cernea (1995a; 1999a; 2003) and Caspary (2007) calling upon economists to come on board. Also, development-induced displacement has been well researched except mining-induced displacement. For example, Megento (2013) considered the effects of urban development-induced displacement in Ethiopia and found that households lost their livelihoods and social service facilities. Hughes (2006) and Mashingaidze (2012) highlighted the consequences of Kariba Dam construction to the Tonga people. It has also been claimed that displacement consequences are gendered. For instance, Benjamin and Fancy (1998) and Hoshour and Kalafut (2007) highlighted that there usually is a disproportionate impact of displacement between males and females. To this effect, Mutopo (2011) found that internal displacement consequences were gendered in Mwenezi, Zimbabwe.

In the majority of cases of forced relocation, those in power always argue that personal interests and rights are insignificant and that the projects are for national interests thereby externalising even the costs of displacement (Cernea, 1997c). Thus, the “greatest good for the large number” argument, analogous to Bentham’s (1823) greatest happiness principle, is promoted. This great good for the majority claim is based on the neoliberal economics argument where land acquisition is justified because the project will result in income generation for the country thereby leading to economic growth through exports (Agbley, 2019). Namutebi (2017, p.58), therefore, noted that “... economic aspects of mining usually overshadow the ecological and social needs of the host communities”. In this regard, Cernea (1997b, p.23) noted that “These countries do have laws that empower the state to expropriate land “needed for the public good”

and displace the owners of those lands” while Agbley (2019, p.159) agrees by stating that in Ghana there are guidelines for land acquisitions but “...the guidelines are just that, non-binding and non-enforceable”. The same could be said about Zimbabwe where Section 26 of the Mines and Minerals Act (Chapter 21:05) states that all communal land and state land is open for prospecting. The great good for the majority argument has widely been used, for instance, in the construction of Lake Kariba which led Zambia and Zimbabwe to get electricity despite the displacement of the more than 50 000 Tonga people. In Africa Mburugu (1994) found that the need to benefit from technical progress derived from the development projects cannot be outweighed by the wishes and needs of the few who will be displaced. The statement by Mburugu (1994) seems to assert that African governments are more concerned with the greatest good for the majority than the welfare of the minority who are displaced by development projects. For Zimbabwe, in particular, mining takes precedence over all the other economic activities, whereby even large scale commercial farmers may be displaced to pave way for mining. Therefore, it means that in development projects, the benefits from these projects as espoused by the neo-classical economics takes precedence over the minority of the populace who will lose. However, it has emerged in some literature that development-induced displacement may not lead to positive benefits since, for instance, mining has been found to increase poverty in some countries, for example, through its negative socio-economic impacts in countries like Australia (Petkova *et al.*, 2009). Again, during Merowe Dam construction in Sudan hundreds of thousands of Sudanese were displaced such that the United Nations was called to intervene *via* the International Criminal Court (Gross; 2008). Therefore, the greater good for the majority argument might not necessarily hold in development projects, a sentiment that is also shared by de Wet (2001, p.4637) who argues that “... a development project ... is in some senses undercutting its rationale”.

The voice of the displaced people is heard now and again but no one or government seems to listen. This is evidenced even in Zimbabwe for instance, by the outcry of the residents of Arda Transau, Tokwe-Mukosi and also Chisumbanje residents, not forgetting the Tonga, over their displacement. Again, when Tarkwa district of Ghana was declared a mining town, several people were displaced (Terminski, 2013) whose outcries remain unaddressed. Additional evidence is the case of the Sudanese displaced to pave way for Merowe Dam construction (Gross, 2008).

Although the UN called for international Court to intervene in Sudan's Merowe Dam displacements, Mooney (2005) and Gross (2008) iterate that it is usually difficult for foreign powers to intervene in protecting residents who remain within their boundaries even if these IDPs may need that support. Despite their outcry, it seems the voice of these people is still unheard.

Several government programmes have been identified as causes of internal displacement. Zimbabwean examples include the Fast-Track Land Reform Programme (FTLRP) in 2000 (Sachikonye, 2003a), *Operation Murambatsvina*, in May 2005 (Kanyenze, Kondo, Chitambara & Martens, 2011), Government campaigns against informal mine workers and politically motivated violence (IDMC, 2011). Therefore, it is imperative to note that residents' relocation is not something new in Zimbabwe as already alluded to before because one will note that the Kariba Dam construction is one such area that caused the forced relocations of Tonga residents in that particular area. During the Kariba Dam construction, about 57 000 Tonga people (Cernea, 1997b, Hughes, 2006) were displaced in an area covering about 5 580 square kilometres (Hughes; 2006). Again, Kariba Dam construction led to animals being rescued under what was termed "*Operation Noah*". Mashingaidze (2012) iterates that the Tongas were pushed upland where the area is infested by tsetse flies, mosquitoes and the wild animals devour crops in the area. Despite these consequences, the displaced Tonga people do not even have access to the said wild animals in terms of hunting permits (Mashingaidze, 2012).

Operation Murambatsvina (operation clean the filth) is another cause of internal displacement in Zimbabwe in which several thousands of people were internally displaced, estimated at 570 000, by Human Rights Watch (2005) and IDMC (2008). However, Tibaijuka (2005) estimated the number of displaced families at 133 534 with Harare Province contributing 36 543 followed by Manicaland Province with a total of 31 610. Tibaijuka (*ibid*) also noted that of all provinces, Mashonaland East was the least affected by the operation with 1 249 families being displaced. Under *Operation Murambatsvina*, the Government pulled down people's houses in a bid to clean the filth as the name itself suggests. It was argued that the overcrowded people caused the cities and towns to be untidy. People were left homeless and some spent weeks and months under open space with nowhere to go. At least six people died because of the demolitions and exposure to cold (Tibaijuka, 2005). In Zimbabwe, such displacement *in situ* is still happening where, on

several occasions, houses have been destroyed by City Councils especially the City of Harare allegedly because the houses were built on undesignated locations. In such instances of upheaval, economic activities are affected and households lose their property and even jobs thereby retarding development in an economy. Lopez *et al.* (2011) noted that sometimes in such displacement *in situ* circumstances, families live in fear of further displacement, hence, may flee further away from that place.

In a related case, the advent of the Fast-Track Land Reform Programme (FTLRP) in 2000 saw some 2 300 farmers not being able to do their farming because of displacements and between 300 000 and 350 000 farm-workers being displaced (IDMC, 2008). The majority of the literature, especially from a human rights perspective, views this aspect as a human rights abuse but Vandergeest (2003) views it differently. Since the fast-track land reform is a form of land tenure reform, Vandergeest (2003, p.48) argued that land tenure reforms "... are a way of improving access to land for poor farmers, or, more recently, a way of facilitating security of tenure and productive investments through the clarification of property rights". This argument seems to hold in Zimbabwe since the majority of those who went into the farms claim to have held no or a smaller land before getting into the farms. However, in terms of property rights, it remains unresolved because most of the so-called 'new farmers' do not have title deeds as yet. Also, the displaced farm workers were found homeless and the farmers landless. So this can be viewed as a double-sided sword. Viewed differently, the FTLRP can be taken as displacement *in situ* (Magaramombe, 2010) because some of the farmworkers remained on the land (no physical displacement), however, some now reside in nearby villages, but lost their livelihoods which were in the form of employment.

However, the statistics relating to the number of people displaced under the Fast-Track Land Reform Program and *Operation Murambatsvina* in Zimbabwe, among others, are estimates since official statistics are absent (UN, 2011) because the Government does not seem to accept that its policies have caused these displacements. This is usually the norm in most countries where governments do not want to be found to have caused such huge displacements and, hence, decide not to disclose the statistics, or even worse the same government may not even know the accurate figures. Because governments do not want to take such responsibilities for

displacement, Mooney (2005) says the governments sometimes prefer the term migrants to internally displaced persons.

This study concentrates on mining-induced displacees from Chiadzwa area, the area that the now Arda Transau residents claim to be theirs based on custom. Even the supreme law of Zimbabwe, the Constitution, gives them the right to this land. However, the Constitution of Zimbabwe Amendment (No.20) Act of (2013) specifies that individuals have the right to use the land but do not own the land or the minerals underneath. Therefore, in terms of the law in Zimbabwe, there seems to be some controversy, especially in rural areas where people are given some user rights to the land on which to reside but these same people do not own the minerals on that land. What this simply means is that once a mineral is found on the land occupied by somebody or some community, the user of that land has to be displaced implying that tenure is conditioned on the absence of a mineral. In short, mining takes precedence over other economic activities, such as agriculture, in Zimbabwe (Mines and Minerals Act, Chapter 21:05; Ministry of Finance, 2013). However, by having the user rights, people take it as ownership of the land. Chiadzwa residents, however, still insist that unless they are compensated enough they will not be moved although some have already been moved to Arda Transau. According to Madebwe, Madebwe and Mavusa (2011), the displaced residents have been given a paltry US\$1000 as a disturbance allowance and a three bedroomed house as a form of avoiding homelessness. In a bid to get their full redress, some residents took the case to the High Court, only to be dismissed on grounds that their case is not an urgent matter (Mtisi, Dhliwayo & Makore; 2011). With this in mind, it means that the voices of the poor are still unheard.

The Arda Transau residents have lost a lot economically, socially and culturally in the process of being displaced. According to Madebwe, Madebwe and Mavusa (2011), 100% have lost ancestors' graves, 100% lost forest resources, 50% of the IDPs lost boreholes and 60% even left crops not harvested. Additionally, these people have lost access to the diamond mining fields they used to mine on a small scale to sustain their lives and households (Nyawo *et al.*, 2012). Valued in monetary terms, these losses might add to thousands or even millions of United States dollars.

A similar case is the case of the Pfungwe area in Mutoko where residents have been complaining that the Chinese companies operating in the area are depriving them of their livelihood which depends on gold mining. The eleven mining companies in Pfungwe have been accused of impoverishing the society by denying it access to mining grounds from which the households used to make a living. The mining companies are said to have forced residents to vacate their land leaving them landless (Mtisi, Dhliwayo & Makore; 2011). Therefore, combining economic deprivation and landlessness leads to household impoverishment.

The issues of forced relocation by mining companies are part of what has been called the ecological distribution conflicts where “[t]hese are conflicts over the principles of justice ... and access to environmental resources and services” (Vandenbroucke; 2008, p.53). Therefore the case of large scale development projects and mining, in particular, forcing residents to relocate cannot be ruled out as a cause of economic deprivation. The displacees become economically disempowered, especially through marginalisation, food insecurity and landlessness, when they are displaced yet Mburugu (1994) noted that people’s identity, especially in Africa, is tied to their land. This is possibly attributed to the fact that most rural households in Africa depend on land for survival, that is, for subsistence agriculture (Ellis & Freeman, 2004). In this regard, uprooting people from their native land leads to decapitalisation of these displaced people (Cernea, 1995a; 1995c) possibly because the land is central in peasant household production (Arora & Rada, 2017). Hughes (1958) noted that a man is judged and judges himself based on how he makes a living and how he makes that living to shape his social identity. Therefore, taking away land from IDPs, which is their source of livelihood, is tantamount to taking away their identity. Again, during displacement, members of the families to be displaced are sometimes denied access to some benefits such as loans of which these loans have the potential to upgrade people’s lives (DFID, 1999; Caspary, 2007). Therefore, displacement has several consequences for human economic and social lives.

From the above discussions, one can note that forced migration is common in a majority of countries the world over. Also, one can note that several mining companies, sometimes alongside governments, Zimbabwean government included, have forced thousands of people out of their native places. This is tantamount to disempowering them economically and politically. This may be the reason why Terminski (2012) argues that Zimbabwe is among the most well-known

examples of mining-induced displacement. In Arda Transau there is an outcry about the economic losses that the people have incurred. The extent of and association of these losses with displacement have, however, not been extensively explored in an economics perspective. It is, therefore, the intention of the current study to explore the economic losses incurred by these residents.

Given that internal displacement has largely replaced cross-border movement of people (refugees), that it has been labelled as one of the most pressing global crises of the twenty-first century (Ayata; 2005) and new Africa's dilemma (Lwabukuna, 2011), attention must now focus more on IDPs than on refugees. This is also justified because IDPs have been considered the forgotten group (Cohen, 2000). Additionally, Africa has been found to have more IDPs than refugees (Cohen, 2000; Maru, 2011; Ferris, 2012; NRC, 2017). Despite the calls by Cernea (1995a; 1996a; 1999a; 1999b), Dwivedi (2002), Jacobsen and Landau (2003), Caspary (2007) and Ruiz and Vargas-Silva (2013) upon economists to come on board to assist in the economics of resettlement, very few, among them, being Fiala (2012), have done so. Cernea (1999a; 1999b) also called upon economists to help in the calculation of losses incurred due to displacement since undervaluation of losses has become prominent. Again, Oucho (2005) argues that Zimbabwe must be delivered from the resettlement predicament in which she is. Cernea (1995a) and Oucho (2005) agree that country or area-specific solutions are imperative to be sought before any resettlement is undertaken. Also, Wayessa and Nygren (2016, p. 387) say "[a]s there are differences in the causes of displacement, there are variations in the post-displacement plights and livelihood-reconstruction needs". Therefore, given the size and extent of internal displacement, there is a need for studies in this aspect of human life if inclusive development is to be attained.

Caspary (2007) also argues that economists have traditionally overlooked the displaced people yet these economists are supposed to give evaluation evidence on the number of losses incurred, thus supporting Cernea's (1999a; 1999b) call. This again corroborates the assertion by Cohen (2000) that IDPs are a forgotten group. Given all this, the current study is significant in that it tries to close the above gaps in the literature by exploring the extent of the economic losses due to mining forced displacement.

The majority of previous studies concentrated more on the effects of dam construction and conflict such as Collier (1999), Imai and Weinstein (2004), Singh *et al.* (2007), and Fiala (2012) on the displaced residents with a few looking at mining's impact. Kemp, Owen and Collins (2017) are among the few who researched on mining but their focus was on how international policy commitments are operationalised by the mining sector. However, as argued by Hoadley (2008) displacement induced by mining is significant and in India alone between 1950 and 1990, mining displaced 2.55 million people. The current research looked at mining-induced displacement consequences using Arda Transau IDPs as a case study and viewed the impacts from an economics perspective not the social consequences perspectives as mostly done by previous studies such as the ones by Cernea whose view was an anthropologist's. Again, Cernea (1995a; 1997a) focused more on equity, human rights and social justice.

1.2.2 The economic activities among IDPs

A considerable amount of literature exists showing that internal displacement forces households and individuals to find other ways to sustain themselves other than those used before displacement (Barbelet, 2017; Abraham, Lien & Hanssen, 2018). In line with this Wayessa and Nygren (2016, p. 387) assert that “[a]s there are differences in the causes of displacement, there are variations in the post-displacement plights and livelihood-reconstruction needs”. Therefore, livelihoods activities are likely to change after displacement. Agriculture usually dominates among the various economic activities done by IDPs (Adeniyi *et al.*, 2016). In some instances, petty trading (for example firewood selling) and asserts disposal become common coping strategies (Fox, Chigumira & Rowntree, 2007; Adeniyi *et al.*, 2016). These activities at times may be gendered (Dolan, 2004; Amisi, 2006) with male and female IDPs employing different livelihood strategies. Thus, after displacement, households find other ways of survival because the ones used before displacement may no longer be practically possible. Possible reasons for changing livelihoods may be the environment, topography, soil and climate, for instance when agriculture is to be employed as the main economic activity. In such instances, other means of survival, alternatively termed coping strategies, have to be devised.

Displacement has consequences that stretch for generations (Cernea, 1997a; Namutebi, 2017), therefore, IDP generations may be forced to find strategies to make a living. That several

generations may suffer from displacement consequences may be explained, for example, by inheritance, whereby after losing land, children will continuously inherit smaller and smaller land portions. These smaller pieces necessitate a change of livelihood activities. Some of the coping strategies, which may have been acquired before displacement, may be short-term while others may be long-term strategies. The choice of coping strategies is determined by various factors, for example, previous location economic activities and land size. In instances where the formerly used means of survival cannot be used in the post-displacement location then the adoption of new strategies is imminent. What remains imperative, however, is that coping strategies have to be employed for IDPs to survive in post-displacement sites given the consequences that would have been incurred.

For the case in point, before displacement, IDPs used a multiplicity of livelihood strategies when faced with certain livelihoods shocks requiring the use of coping strategies. For instance, they used to sell wild fruits such as bird plum/African sweets (*nyii*), African ebony/jackal berry (*shuma*) and baobabs (*mauyu*) and do mat- and basket-weaving for sale, to supplement their income and food security, a phenomenon similar to what happened in Ghana (Agleby, 2019) when the land was grabbed to pave way for jatropha plantations. However, in the post displacement era, some of the activities which used to be undertaken in Chiadzwa are no longer possible such as basket-weaving for selling. This disturbance of livelihood activities poses more livelihood risks since the once relied upon activities will now be impossible. With this in mind, the IDPs have to reorganise their economic activities resulting in coping and or adaptive strategies being employed for survival. On the one hand, coping strategies are “... ‘next best’ efforts to make do in a difficult situation with the hope that the household can return to normal activities and their normal livelihoods strategy” (de Satge *et al.*, 2002, p.159). Adaptive strategies, on the other hand, can be viewed as coping strategies that are long term in nature. Therefore, given the disturbance in livelihood strategies, IDPs are likely to find ways to survive, thereby forcing them to adopt coping strategies.

Coping strategies have been argued to come in various forms; some of them being preventative while others are impact-minimising strategies. On the one hand, the preventative strategy is proactive in that the individual takes measures so that they will not be affected by the event (Jabeen, Johnson & Allen, 2010) thus, it can be safely referred to as an *ex-ante* strategy. On the

other hand, impact minimising strategies are reactive, hence can be considered as *ex-post* strategies. These strategies are used to minimise loss or facilitate recovery (Jabeen, Johnson & Allen, 2010). From the two aforementioned forms of coping, the thesis takes the impact of minimising or *ex-post* form of coping strategy since it considers what is now being done by IDPs in the post-displacement era. Jabeen, Johnson and Allen (2010) also highlight that coping operates at different levels ranging from individual, community and institutional. Examples cited include household for individual, neighbourhood for community and citywide for institutional. With regards to this study, the individual approach was taken because coping strategies were viewed from an individual household perspective. Despite taking an individual approach, the study takes cognisance of the various forms that coping takes.

One form of the individual level *ex-post* strategy used by IDPs is animal disposal. In the case of Arda Transau displacees, the households were informed of the need to dispose of their animals, especially cattle, before relocation, thereby possibly impoverishing them. The forced livestock disposals led IDP households to lose their source of livelihoods, that is, animals which they used to dispose of in times of need and those animals used to help minimise food insecurity through the supply of manure and draught power. However, some IDPs still have some livestock, especially small ones like chickens, on which they sometimes rely by disposing of in times of need.

Whilst unemployment is high in the Zimbabwe, some people still survive on wages and others on self-employment. In Arda Transau, this is almost now history. Most of those who previously were self-employed joined the unemployed group. One possible explanation for the loss of employment is landlessness. Most of the IDPs used to be self-employed in agriculture, thereby becoming unemployed when the land was lost. Again, for productive economic activities, the soil requirements in Chiadzwa and Arda Transau are somehow different thereby implying the need for reorganisation of economic activities by the displaced households. The study on economic activities among the displaced was, therefore, necessitated by the need to understand the choices of livelihood strategies among the displaced households given the scanty existing literature.

1.2.3 Life Satisfaction among IDPs

While displacement affects economic variables like land, employment status and economic activities, it is also likely to affect satisfaction with life. Life satisfaction as a subject in the economics discipline is considered to be in its infancy (Bjornskov, Dreher & Fischer, 2008; Brey, 2012). Similarly, its mother set, subjective well-being, is also still not fully mature (Haybron, 2011). Given the infancy, its definition has then not been again agreed upon (Prasoon & Chaturvedi, 2016). However, Diener, Sapyta and Suh (1998), Anielski (2007), Brey (2012) and Ferrer-i-Carbonell (2013) noted that well-being is an important research topic in economics. Furthermore, life satisfaction among migrants is again in its infancy, with that about internal displacees being even scantier. Given the amount of literature on life satisfaction emanating from the recent surge in researches in that area (Ambrey & Fleming, 2011), the few numbers of researches on life satisfaction among internal displacees, with Getanda, Papadopoulos and Evans (2015) being among the few to do a study on life satisfaction in Africa, has motivated this study. Although being among IDPs, the study by Getanda, Papadopoulos and Evans (2015) concentrated mostly on the mental health of conflict-induced IDPs in IDP camps. Again, Van Ootegem and Verhofstadt (2016) indicated that there is need for researches in life satisfaction outside those involving disaster-induced migration of which mining-induced displacement is one such candidate. Additionally, the major focus of those studies dealing with disaster-induced migration is mental health ignoring other aspects of life.

Country happiness rankings have become a good indicator of citizens' levels of satisfaction with life. Based on these rankings, Zimbabwe was ranked as number 103 out of 156 countries in the world rankings of happiness between 2010 and 2012 (Helliwell, Layard & Sachs, 2013). She also had an average life satisfaction score of 3.9 alongside Tanzania (World Values Survey, 2009) between 1999 and 2000 and an average happiness index of 4.14 between 2013 and 2019, all this being measured against a scale ranging between 0 (implying unhappiness) and 10 (representing being happy) (www.theGlobalEconomy.com). Given these figures on national satisfaction levels and national rankings and also the prevailing internal displacements of individuals, it is likely that forced migration may worsen the life satisfaction situation of the displaced individuals.

Several determinants of life satisfaction exist in the literature, much of which emanates from the psychology literature. Among the most predictors of life, satisfaction is the domains of life such as health, income, job and family life (Kapteyn, Smith & Soest, 2009; Ambrey & Fleming, 2011). However, the literature on the economics of happiness is relatively new but has attracted a lot of interest in policy and research avenues (Bjornskov, Dreher & Fischer, 2008). The broad area of happiness economics has given birth to life satisfaction, a relatively young area of research as well. The area of life satisfaction falls within the social well-being economics framework where satisfaction with life is, however, individual specific. Thus, when assessing one's satisfaction with life, it is up to the individual respondent to have their own expected (standard) life and compare that with the one they are leading (Shin & Johnson, 1978; Pavot & Diener, 1993; Rathore, Kumar & Gautam, 2015). If the two (expected and actual levels) almost match, the individual will likely report a high level of satisfaction with life (Pavot & Diener, 2009). Therefore, being new to happiness studies, economists are most likely to adopt determinants of SWL from the psychology literature.

Despite life satisfaction among migrants, in general, having been articulated, conflicting results have also been found to date with SWL being sometimes reported to be higher among migrants compared to non-migrants (Gunasekara, Rajendran & Grant, 2014) while in other studies the complete opposite was found (Neto, 2001). Additionally, Balyejjusa (2017) noted that Somali refugees in Uganda are generally satisfied with their life. This was attributed to the non-discriminatory nature of the host communities. On a comparative basis, Colic-Peisker (2009) established significant group differences in life satisfaction among migrants from different origins. Therefore, little is known about satisfaction with life among migrants.

The thesis is unique in that it deals with the quantification and determinants of life satisfaction among internal displacees. The Arda Transau category of IDPs is unique in that it has been allocated houses (unlike IDP camp residents) and the IDPs are not disaster-induced migrants but mining-induced ones. As indicated under contribution to literature, (Section 1.7) mining-induced displacement is unique in various ways such as the possibility of stepwise relocation and cohabitation between the displaced and the displacer.

Given this gap, the thesis, therefore, intends to quantify life satisfaction among IDPs and compare it with the life satisfaction before displacement as well as likely future life satisfaction. Given also that the majority of existing literature on life satisfaction looks at the cross-cultural comparisons of life satisfaction, for instance, Biswas-Diener, Vitterso and Diener (2005) who, in their study, looked at life satisfaction among the Masai of Kenya, United States of America's Amish and the Greenlandic Inughuit, the current study does not consider culture since IDPs in Arda Transau almost share the same culture given that they all came from Chiadzwa.

1.2.4 Overview of Internal Displacement in Zimbabwe

Internal displacement is not a new phenomenon in Zimbabwe. In brief, during the 1890s, natives were forcibly relocated from their native locations to other areas that the colonial master did not want to use. These pieces of land, to which the natives were to occupy, were not favourable to the displacees' agricultural needs neither were they suitable for the settlers' needs (Sachikonye, 2004). In line with this, Chiruguri (2015) notes that forced displacement usually takes its starting point from colonial rule development approaches. In a bid to reclaim the land, the first and second liberation struggles erupted. Only after the second liberation struggle did Zimbabweans manage to, at least, reclaim control of the land. However, the land question remained not fully resolved and is still so. Around the year 2000, the veterans of the second liberation struggle and like-minded individuals had to take it upon themselves to occupy the white-owned farms under an operation code-named *Jambanja*, meaning violence, disorder, and chaos (Sachikonye, 2004; Fox, Chigumira & Rowntree, 2007). The Government of Zimbabwe, upon realising its inability to control the move, took it as its initiative and renamed *Jambanja* to Fast-Track Land Reform Programme (FTLRP). Again, during the FTLRP, thousands of farmworkers lost their jobs and livelihoods (Magaramombe, 2010) with IDMC (2008) estimating the figure to be between 300 000 to 350 000 of which between two and twelve per cent of these farmworkers benefitted from the FTLRP. According to Sachikonye (2003b) and Fox, Chigumira and Rowntree (2007), the 300 000 families were resettled on about 11 million hectares of land under the FTLRP. It seems Sachikonye (2003b) and Fox, Chigumira and Rowntree (2007) were being conservative on their figure compared to IDMC (2008). However, most of the FTLR displaced families remained within villages surrounding the farms that were taken over thereby resembling displacement *in situ*. With displacement *in situ*, people's productive resources are destroyed and productive

systems dismantled (Feldman *et al.*, 2003). *In situ* displacement does not only involve physical uprooting of people but also the disturbance of livelihoods even in the absence of physical displacement.

Again, the construction of Lake Kariba is one such case in point that cannot be ignored when it comes to internal displacement discussions in Zimbabwe. On the one hand, Cernea (1997b) and Hughes (2006) estimated that when Kariba Dam was built, about 57 000 Tonga people were displaced upland where the area is infested with tsetse fly. On the other hand, Magadza (1994) estimated the Gwembe-Tonga displaced population to be 86 000 with 55 000 having been on the Zambian side and 31 000 being from the Zimbabwean side of the Zambezi River of which those from Zimbabwe were moved by force. While Cernea (1997b) estimates that 57 000 people were displaced by Kariba dam, Cernea (1997c) says 56 000 people were displaced by the same project. Cook and Mukendi (1994), however, estimated the figure at 67 000. These variations in IDP statistics, for the same development project, indicate that IDP figures remain estimates.

Other government programmes such as Operation *Murambatsvina* (translated to operation clean the filth) and the Fast-Track Land Reform Programme cannot be spared when discussing Zimbabwean internal displacement issues. It was noted that during Operation *Murambatsvina* (meaning clean the filth), 570 000 people were displaced (Human Rights Watch, 2005; IDMC, 2008). On the contrary, Tibaijuka (2005) estimated the number of displaced families under Operation *Murambatsvina* to stand at 133 534 with Harare province contributing 36 543 followed by Manicaland province with a total of 31 610. Tibaijuka (*ibid*) also estimated that, of all provinces, Mashonaland East was the least affected with 1 249 families affected by operation clean the filth. Operation *Murambatsvina* can be viewed as a different form of displacement in that it did not only involve physical uprooting but also social dimensions, hence, it can be termed *in situ* displacement in line with Feldman *et al.* (2003).

Natural disasters have also cropped up as causes for concern as far as displacement is concerned in Zimbabwe with 800 people having been displaced in 2015 (IDMC, 2016) with the figure rising to 10 000 in 2017 (IDMC, 2018). For 2018, IDMC (2019) stated that Zimbabwe had 1 100 new displacements. In Zimbabwe, the major natural disasters associated with displacements are cyclones, for instance, in 2000 Cyclone Eline and the 2017 Cyclone Dineo. In

2019, one of the worst cyclone-induced disasters happened in Zimbabwe, in Chipinge and Chimanimani, and in Mozambique where several persons were affected by Cyclone Idai. As of 21 March 2019, UNICEF Zimbabwe (2019) noted that 250 000 people were reported as victims of Cyclone Idai in Zimbabwe with 154 people reported as dead while 189 were missing, with some bodies never found. Almost half (48%) of these reported victims are children. Again, IDMC (2020) stated that as of 31 December, 52 000 new displacements occurred in Zimbabwe as a result of Cyclone Idai. The above figures correspond to worldwide statistics where IDMC (2015b, p.4) states that “[t]oday, the likelihood of being displaced by a disaster is 60% higher than it was four decades ago”.

Again in Zimbabwe, internal strife has caused the displacement of individuals. Such cases were reported especially during the run-up to the 2008 presidential elections re-run (IDMC, 2011) where an estimated 36 000 people were displaced (IDMC, 2015a). However, IDMC (2011; 2015a) noted that most of the 2008 politics-related IDPs have returned to their homes. The act of violent displacement, however, has been rare in Zimbabwe as compared to some other African countries.

Recent displacements in Zimbabwe also emanated from the mining activities. For example, people were displaced to pave way for diamond mining in Marange. Also, some 366 households were displaced by Rio Tinto's Murowa Diamond Mine into Shashe area. In the case of Murowa Diamond, 265 graves were also relocated (Terminski, 2012). Chinese miners in Pfungwe have also caused displacement in the area yet nothing has also come out in the form of assistance to the community.

For Zimbabwe, The Social Development Notes (2009) estimated that between 570 000 and one million people were internally displaced compared to 16 841 refugees as of 2008. This indicates a huge disparity between the internally displaced population and refugees with IDPs outnumbering refugees, as was also noted to be the case in most African states (Cohen, 2000; Ferris, 2012). However, IDMC (2011) could not establish the number of IDPs in Zimbabwe for the year 2008 again seemingly confirming that accurate IDP statistics are difficult to get.

From these figures, one notes that the number of IDPs has surpassed that for refugees, hence, the real problem Zimbabwe faces is that of internal displacement, not refugees, sentiments also shared by Oucho (2005). Therefore, Oucho (2005) argued that Zimbabwe must be delivered from the resettlement predicament in which she finds herself. Again, in Zimbabwe mining has caused much displacement (Terminski, 2012).

1.2.5 Chiadzwa Diamond Field Displacements

During the colonial era, the period between the 1890s and 1980, De Beers discovered diamonds in Chiadzwa, in Chief Marange's jurisdiction, but the information about the availability of diamonds in the area came to the general public only in June 2006 (Kusena, 2015). Again in 2006, a huge number of people thronged Marange intending to undertake to mining (Nyawo, Goredema & King, 2012; Kusena, 2015). By December of the same year the Government took over the Marange Diamond fields after about 10 000 artisanal miners were undertaking mining activities in the area (Nyawo, Goredema & King, 2012). It was in 2009 that the Zimbabwean government decided to relocate families to Arda Transau, the area where the majority of the displacees are now based (Terminski, 2012). However, the illegal mining activities had already caused more harm than good since many people had been killed during a military clean-up exercise (Chimonyo, Mungure & Scott, *n.d.*).

Information from discussions with households revealed that households were never consulted before being forced to relocate. The households were also forced to reduce the number of livestock especially cattle since space in Arda Transau would not accommodate a large herd. To meet this requirement, some households had to dispose of their cattle at giving away prices. Only a few households took their large livestock with them, but of course, a reduced number of livestock was taken.

Upon being displaced from Chiadzwa, households were promised to be taken care of. Such support was to be in the form of monthly food hand-outs (Kusena, 2015) and even monetary compensation. However, food hampers were only provided for a few months with the Diamond Mining Company (DMC) being one such company to have done so. Monetary compensation, according to Kusena (*ibid*), was never guaranteed and up to the time of data gathering for this

thesis, no compensation was given except US\$1000 which was meant to be a disturbance allowance.

1.2.6 Overview of Consequences of Internal Displacement, Economic Activities and Satisfaction With Life Among IDPs

The aftermath of displacement has been overlooked by economists (Cernea, 1996a; 1997a; 1999). Cernea in his seminal writings identified about eight consequences of internal displacement which include landlessness, joblessness, marginalisation, loss of access to common resources and food insecurity, among others (Cernea, 1995a; 1997a; 1999a; 1999b; Hoshour & Kalafut, 2007; Petkova *et al.*, 2009; Carrillo, 2009). For instance, IDPs in the Democratic Republic of Congo (DRC) experienced chronic food insecurity in 2017 (IDMC, 2018).

When displaced, IDPs lose the land they own resulting in them being economically decapitalised (Cernea, 1997a). This decapitalisation coupled with other consequences of internal displacement result in impoverishing people. Other ripple effects from landlessness such as food insecurity loom (Cernea, 1995a; Cernea, 1997a; Agbley, 2019). Also, marginalisation cannot be ignored after displacement. Instances of social marginalisation such as name-calling are rampant, for example, the pejorative use of the word *Machaina* (Chinese) in Arda Transau referring to the people living in Arda Transau who have been displaced by Chinese companies from Chiadzwa. Just before or after being displaced, economic marginalisation may also sprout whereby individuals may be denied access to certain things such as credit just before or immediately after displacement because of the high probability of non-payment of the principal plus interest. All these consequences can be considered to be results of displacement. Therefore, IDPs will claim '[i]f only we were not displaced this would not have happened', thereby, agreeing with Downing (2002, p.14) who iterated that "... if the costs would not have accrued without the project, then they are project costs ...".

The afore-mentioned consequences of displacement are arguably gender-biased with females said to be hard hit by displacement more than males (Benjamin & Fancy, 1998; Mutopo 2011; Majidi & Hennion, 2014). The reasons for females being more exposed to the effects of displacement than their male counterparties sometimes stem from the roles enshrined in

traditions associated with societies. For instance, the fact that the woman is supposed to stay at home while the man goes to work exposed women and children to more risks associated with internal displacement in Nuanetsi (Mutopo, 2011). However, it also has been noted that after displacement, gender roles may change (Mertus, 2003). Also in conflict-prone zones, women are subjected to gender-based violence and, more often than not, to sexual abuse (Oucho, 2005; Acharya, 2009; Hovil, 2012). Seemingly contrasting views have, however, been put forward by Cagoco-Guiam (2013) and Plumper and Neumayer (2006). Cagoco-Guiam (2006) purports that since males dominate the combatant force, the males are mostly affected by conflict while Plumper and Neumayer (2006) note that this only applies if direct effects are considered. If indirect effects are put forward, females are affected more, for example, the gender gap in life expectancy reduces (Plumper & Neumayer, 2006).

Displacement is not always an end to life. This statement implies that life still goes on despite having been uprooted and, hence, ways of surviving need to be found in the post-displacement era. Since displacement is one form of stressful life events, coping strategies may need to be devised. Most economic agents are forward-looking, hence, given a chance may devise *ex-ante* risk management strategies to mitigate the effects of future unforeseen events. However, in most cases, *ex-post* strategies are applied especially in forced migration situations. Such *ex-post* strategies include asset disposal, use of social capital and livelihood diversification, among others. Just like the consequences of internal displacement, livelihood activities after displacement may be gendered, therefore, Chambers and Conway (1991) argue that livelihood strategies may be determined by the accident of birth. Accident of birth in this statement may mean many things including, but not limited to, being born male or female and being born in a relatively rich or poor family.

Again, the choice of a coping strategy depends on various factors. Factors such as previous location economic activity, as a proxy for experience, play a significant role. For instance, Bozzoli *et al.* (2011) established that migrants in Uganda were more likely to cultivate because they had the necessary experience. Adeniyi *et al.* (2016) also found that agriculture usually dominates economic activities followed by petty-trading possibly because of the experience acquired before migrating. Risk aversion is one possible determinant of the choice of coping

strategies. With women being more risk-averse, they are likely to rely on their experience from the pre-displacement site as a post-displacement economic activity.

After displacement, SWL among the displaced households is likely to be affected. For instance, Agbley (2019) noted that land grabs have snowballing effects on food security and well-being implying a link between land disposition and well-being of the displaced persons. Like most other stressful life-changing events, internal displacement is likely to affect satisfaction with life negatively. Another potential explanation for this link is that displacement is associated with material deprivation. This, coupled with other economic consequences of displacement, results in an economically unproductive population since a happy population tends to be more productive (Keyes, 2006; Zelenski, Murphy & Jenkins, 2008; Ivlevs, 2015; Arora & Rada, 2017). Ripple effects of low life satisfaction or dissatisfaction with life are usually negative on the national cake. Again, the level of satisfaction with life is also likely to affect the choice of livelihood activities done by displaced households.

1.2.7 The Link among Mining-Induced Displacement Consequences, Economic Activities and SWL among IDPs

One theory that links DID consequences, economic activities and SWL is the resource curse hypothesis. Concerning the resource curse hypothesis, countries with abundant natural resources such as oils and minerals are expected to extract these minerals for the benefit of the country's inhabitants (Polterovich, Popov & Tonis, 2010; Ali, Murshed & Papyrakis, 2019). Unfortunately, this is not so, thus, economic declines in natural resource-abundant nations are higher than in natural resource-poor countries (Sachs & Warner, 1995). Generally, economic growth and development among resource-abundant countries have been on the decline implying a decline in welfare (ODI, 2006; Jones, 2008). ODI (2006) noted that the decline in growth is usually experienced if windfall gains from the resources are not properly managed. Concerning happiness and mineral rents, Ali, Murshed and Papyrakis (2019) found that mineral rents are negatively associated with happiness in oil-rich countries. Also, natural resources have been found to provoke conflict (Natural Resource Governance Institute, 2015) thereby again leading to the displacement of people which again has an implication on economic activities and happiness among the displacees. The possible reasons for conflict associated with the resource curse might be the unfulfilled public expectations and income inequality. ODI (2006) cites that

receipt of large amounts of revenues from natural resources may give room for governments to ignore due diligence issues and increase corruption by public officials. Public expenditure has been found to exacerbate inequality especially where expenditure is concentrated in towns and cities and, therefore, marginalise the rural areas yet these areas are the most affected by extraction industries.

To summarise the linkages among economic consequences of mining-induced displacement, economic activities and satisfaction with life, a conceptual framework has been developed based on literature, particularly the resource curse hypothesis, attribution theory by Heider (Weiner, 1985; 2008; Malle, 2011), Pareto criterion and Kaldor-Hicks efficiency. On the one hand, the attribution theory notes that anything has a cause and people are interested in finding these causal relationships, while Pareto optimality and its variant, the Kaldor-Hicks criterion, suggest that the cause results in welfare changes. On the other hand, the resource curse hypothesis says the changes in welfare are a result of natural resource abundance. The conceptual framework is shown in Figure 1.1

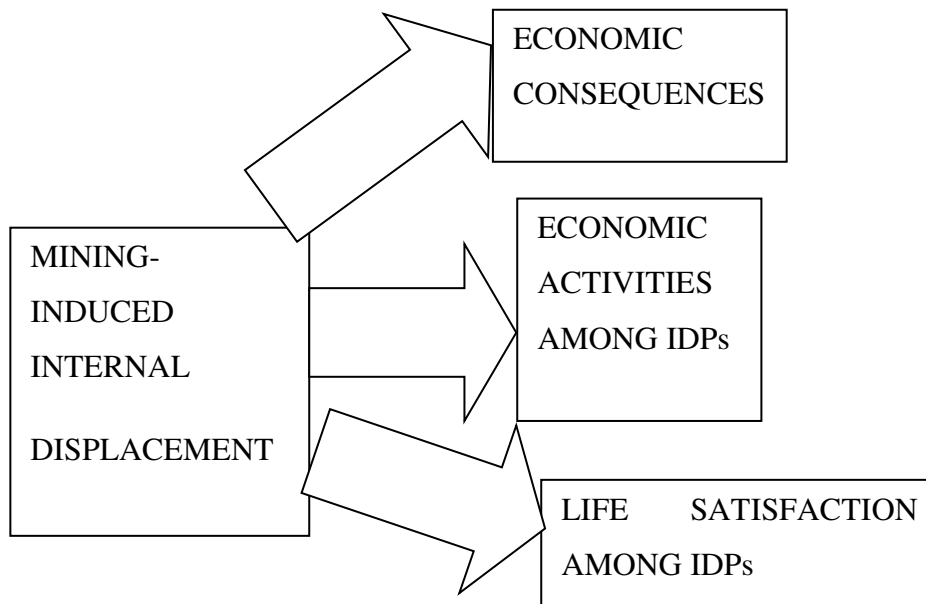


Figure 1.1: Conceptual Framework of the Thesis

In Figure 1.1, it is shown that internal displacement has consequences of which some of these consequences have been explicitly examined by Cernea (1997a) in his popular Impoverishment Risks and Reconstruction (IRR) model. These consequences are, on the one hand, mostly negative such as loss of employment, loss of land and marginalisation, among others cited by Cernea (1995a; 1997a). On the other hand, the consequences may be positive such as access to better roads, having fertile soils and having increased access to common property resources, as was also noted by Cernea and Schimdt-Soltau (2003) and Vanclay (2017). Vanclay (2017) noted that the displaced may experience improvement in material standards of living. Therefore, the thesis claims, following the attribution theory, that these consequences, positive or negative, are a result of displacement. Again, this complements the prediction of the resource curse whereby mining-induced displacement will likely lead to welfare changes. However, from Cernea's (1997a) perspective, displacement leads to losses, hence, the name of his model 'impoverishment risks and reconstruction' model.

Displacement also has an implication on economic activities and coping strategies of the displaced population with Bozzoli *et al.* (2011) acknowledging that little attention has been paid to economic activities of the displaced households. Thus, once displaced, one still has to make a living thereby forcing them to engage in economic activities which may be considered as coping strategies. How to make a living will, however, be determined by the coping strategies chosen, for instance, sale of firewood, farming and disposal of animals, among others.

Figure 1.1 also shows a link between displacement and satisfaction with life. A life-changing event like displacement is more likely to affect satisfaction with life scores among the displacees. In this regard, life satisfaction may fall especially if one is relocated to an area that one may not have thought of as their place of habitual residence. Again, given the economic losses incurred, life satisfaction is likely to fall. However, it is also plausible to find some individuals getting satisfied with life despite the magnitude of losses incurred. In this case, it is possible to explain this situation with various theories such as the social comparison theory where, because of proximity to other displacees who may become the comparison group, individuals may remain or may become satisfied with their life since the reference group will be similar others.

Therefore, in the context of the attribution theory, it is also imperative to note that changes in economic activities and satisfaction with life among displacees may also be a result of the economic consequences of displacement. Again, it is assumed that IDPs accurately attribute asset losses associated with displacement to displacement and do the same for changes in economic activities and satisfaction with life. Also, those IDPs who consider development-induced displacement as controllable are likely to report more negative effects of displacement, especially on the SWL variable. With these statements, one may be compelled to assert that the formation of these causal attributions is important for adaptation to life-changing events like displacement. In short Weiner (1985, p.548) notes that “[o]nce a cause, or causes, are assigned, effective management may be possible and a prescription or guide for future action can be suggested”. Also, in the words of Owen and Kemp (2014, p.91) “[i]t has been clear for some time that ... efforts are required to ensure that ... risk is identified, understood and responded to by those parties involved in mining development”. Therefore, once the economic consequences of displacement and associated changes in SWL and economic activities are known, their effective management is likely to be known by the parties concerned and appropriate risk management is made possible. Of note is that with positive outcomes, attribution takes little attention unlike unfavourable ones such as losses.

1.3 Problem Statement

Internal displacement has been on the rise, the world over, with mining-induced displacement being among the various displacements. The world over, IDP statistics outweigh those for refugees (Cohen, 2000; Maru, 2011; Norwegian Refugee Council, 2017). In Africa, internal displacement has become the new African dilemma (Lwabukuna, 2011) given that IDPs have outnumbered refugees and that two-thirds of the world's IDP population lives in Africa (Norwegian Refugee Council, 2017). With the increase in demand for minerals worldwide, mining-induced displacement is likely to rise, especially in less developed countries, Sub-Saharan Africa included, particularly those countries that depend on minerals. The phenomenal increase in mining-induced IDPs has been necessitated by the espoused benefits derived from exporting minerals extracted from IDPs' places of habitual residence. These espoused benefits, however, have been associated with increased negative effects on the lives of those displaced thereby counteracting the claims by neoliberal economics on the benefits of mineral extraction

and exporting on lives. Although neoliberal economics predicts that growth derived from mining has benefits that cascade to everyone, even those displaced by the mines, the predictions of the Pareto optimality condition provides a counter-argument. Thus, Pareto optimality, in this context, predicts that increased growth from mineral exports will not improve the lives of some people without negatively affecting the lives of those displaced. Therefore, the greatest happiness principle (Bentham, 1823; Mill, 2001; Jacobson, 2003) implied by neoclassical economics is questionable, with special focus being on the proportionate representation part, as also revealed by arguments by Risse (2004). Thus, the thesis aims at determining the relationship between displacement and the associated economic consequences such as changes in employment status, income, economic activities and life satisfaction.

Little is already known about the consequences of mining-induced displacement and relocation (MIDR), hence, Owen and Kemp (2015, p. 479) say “... there is an urgent need to better understand the effects of MIDR and the specific risks it poses ...” especially from the economics perspectives. Additionally, the economic consequences of MIDR have a bearing on the displacees' economic activities thereby requiring these IDPs to cope. Thus, with forced relocation, households are, in most cases, forced to abandon their livelihood strategies such as those derived from indigenous knowledge systems. Along with these changes in economic activities, come possible changes in satisfaction with life. Thus, since forced migration is a life-changing event, satisfaction with life is likely to be affected when households get displaced. In essence, MIDR has effects which are not yet well established especially from an economics perspective, therefore, requiring particular attention such as the one made in this thesis.

The thesis, therefore, focuses on analysing the consequences of mining-induced displacement in Arda Transau by applying Cernea's IRR model focusing particularly on economic variables. It also acknowledges that displacement affects economic activities among displacees. With little attention having been made on the determinants of the choice of economic activities among IDPs, the thesis is also valid by finding, using a multinomial logit model, the main determinants of the choice of economic activities among Arda Transau IDPs. Again, given that a displacement is a life-changing event which is likely to affect SWL, the thesis particularly focuses on finding, using an ordered logit model, the key determinants of SWL among IDPs in Arda Transau.

In line with causes and consequences, Weiner (1985, p.548) had this to say: “[o]nce a cause, or causes, are assigned, effective management may be possible and a prescription or guide for future action can be suggested”. In the context of this study, it may then be said once mining-induced displacement consequences and the associated changes in economic activities and satisfaction with life are known, their effective management is likely to be known and made possible. The possible measures will then be taken to reduce households' vulnerability to such livelihood shocks.

With Zimbabwe being a mining country (Terminski, 2012; 2013; Ericsson & Lof, 2019) in Africa, South of the Sahara, where IDPs are the new African dilemma, Zimbabwe can be considered to be a fertile ground for studying issues associated with MIDR. Additionally, mining has resulted in significant displacements in Zimbabwe (Terminski, 2012; 2013), possibly leading to changes in economic activities and life satisfaction among those displaced by mining activities. One of the worst things to have happened in Zimbabwe, as a result of mining, is the relocation of 265 graves (Terminski, 2012). This occurred when households were displaced by Murowa Diamonds from Zvishavane to Shashe area and bodies were exhumed to allow mining to take place.

Chiadzwa displacement is unique for certain reasons. For example, certain characteristics of the area which make it unique are the houses which were built for the IDPs to reduce the extent of homelessness and land which was given to the IDPs to encourage economic activities. This is in sharp contrast with what happened during the FTLRP where households were relocated without the appropriate infrastructure in place. The set-up is also more of an urban one which may affect IDPs' welfare positively or negatively.

1.4 Research Objectives

The thesis aimed to find out the relationship between mining-induced displacement and economic variables such as income, land and social capital as well as economic activities and satisfaction with life among IDPs. The case study area used is Arda Transau in Zimbabwe. With the aim in mind, the objectives were then phrased in three categories as follows:

1.4.1 Economic Consequences of Displacement

The objective of the study on the economic consequences of MIDR was to explore the economic consequences of mining-induced internal displacement among Arda Transau IDPs.

1.4.2 Economic Activities among IDPs

On economic activities, the general objective is to identify and examine the determinants of choice of economic activities or coping strategies among IDPs in Arda Transau from an individual household livelihood perspective. The following are the sub-objectives that helped attain this objective:

- To explore the coping strategies of Arda Transau displacees who happen to have no likelihood of being moved again; and
- To explore the determinants of the choice of a particular coping strategy among Arda Transau IDP residents.

1.4.3 Satisfaction with Life among IDPs

On SWL, the main objective was to determine the correlates of life satisfaction after displacement. To attain such an objective the following secondary objectives were set:

- To quantify and compare pre- and post-displacement life satisfaction among IDPs in Arda Transau; and
- To explore the determinants of life satisfaction among IDPs in Arda Transau.

1.5 Research Questions

To attain the above objectives, the following research questions play pivotal roles.

- Which economic consequences of displacement have the mining-induced displacees in Arda Transau experienced?
- Does the IRR model explain the economic consequences of mining-induced displacement?
- What coping strategies are the displaced families in Arda Transau using?

- What determines the choice of particular coping strategies by IDPs in Arda Transau?
- How does displacement affect the level of SWL among IDPs in Arda Transau?
- What determines SWL among mining-induced displacees in Arda Transau?

1.6 Contribution to Literature

The thesis was motivated by the fact that most economists have relegated the study of consequences of internal displacement to anthropologists and other disciplines even though displacement has economic consequences. Thus, the scarcity of literature on economic consequences of displacement in general (Cernea, 1997a; 1999a; 1999b; Ruiz & Vargas-Silva, 2013) and mining-induced displacement and resettlement in particular (Owen & Kemp, 2015) has been one major reason for extending this idea. Earlier on Jacobsen and Landau (2003) had noted that economics is a candidate for studies on forced migration thereby cementing the acknowledgement by Cernea (1999a; 1999b) and Dwivedi (2002). Additionally, the thesis contributes to the existing literature in that mining-induced displacement has been under-studied with dams and other development-induced displacements having been well-researched on, even though mining-induced displacement also has consequences, worth to be researched on, that affect the IDPs (Hoadley, 2008; Terminski, 2012). Additionally, in Zimbabwe mining-induced displacement has led to a large number of displacees (Terminski, 2012).

Also, mining-induced displacement is unique in various ways as was noted by Owen and Kemp (2015) and Kemp, Worden and Owen (2016). Owen and Kemp (2015) noted that mining-induced displacement and resettlement is unique because resettlement can take place at any stage of the project. The implication is that even if displacement may take place at exploration or beginning of mining, additional land may be required during the duration of the project requiring more displacements. Such needs may be a result of mineral prices which may become attractive to explore or mine a larger piece of land. Therefore, Downing (2014, p. 8) noted that mines may use a “stepwise mining expansion and land take” approach, meaning that displacement may take place in phases. Owen and Kemp (2015) also noted that mining-induced displacement and resettlement is unique in that the displaced and the miners may co-habit. This shows a situation where households may just be moved a few kilometres from the mining site, as what happened

with Lihir mine in Papua New Guinea (Owen & Kemp, 2015), with the result that the mining activities may again impact negatively on the displaced through pollution. It was also noted that because of resource constraints, most governments relegate the responsibility of managing resettlement to the same companies that lead to the displacement of people, which appears to be somehow true in Zimbabwe given how resettlement was done in Arda Transau. Kemp, Worden and Owen (2016, p.19) noted that mining companies that cause displacement are under pressure “... to minimise harm to people and the environment and ... to ‘do good’ by generating net positive benefits”. Also, the effects of mining activities may be felt after the company has exited the area (Kemp, Worden & Owen, 2016). Therefore, with this evidence, mining-induced displacement and resettlement may be considered a unique form of displacement that deserves attention in research.

The thesis was also necessitated by the observation that most studies on forced migration did not consider the economic consequences of displacement, livelihood activities of the displaced and satisfaction with life after displacement within one study, for example, Cernea (1997a; 2000; 2003) and Caspary (2007), even though life-changing events like displacements also have likely impacts on economic activities and satisfaction with life among the displaced. It is, therefore, the aim of the thesis to extend the existing literature by considering the economic consequences of internal displacement, determinants of the choice of economic activities and life satisfaction among IDPs. Again, existing literature on economic activities and life satisfaction among IDPs largely ignore the effects of social capital yet it plays a significant role especially among this group of households.

Lastly, the Norwegian Refugee Council (2017) noted that the extent of forced migration necessitates a refocus on internal displacement. Given that the number of IDPs is now twice that of refugees (Norwegian Refugee Council, 2017), the council called for attention to be now more on IDPs than refugees. Therefore, the thesis is a response to the call as well.

Given the general contribution to literature and with the view that the thesis brought MIDR economic consequences, economic activities and SWL into one study, the main contribution to literature was then divided into three sub-categories (Sections 1.6.1, 1.6.2 and 1.6.3). The first

category relates to the contribution specifically emanating from the consequences of internal displacement. This was followed by the contribution to the literature on economic activities among IDPs. Lastly, existing SWL literature was found to be deficient, therefore, a contribution was found necessary and this was done in Section 1.6.3.

1.6.1 Contribution to Literature on Consequences of DIDR

The literature on the consequences of internal displacement is vast but little has been done specifically on the economic consequences of mining-induced displacement. The majority of existing literature is from anthropological perspectives such as the vast writings of Cernea which date back to the 1980s. Thus, professional economists, as Cernea (1999b; 2003) and Caspary (2007) prefer to say, have been paying little or no attention to population displacement studies despite the assertion by Cernea (1997a, p.1569) that “[i]nvoluntary population displacements and resettlement entailed by development programs have reached a magnitude and frequency that give these phenomena worldwide relevance ...”. However, economists, especially development economists, must have been visible since internal displacement is a development issue and affects economic development, as espoused by its proponents. Thus, Dwivedi (2002, p.724) acknowledges that economists have been out of the debate by saying “[t]his has largely been the result of a kind of territorial monopoly of anthropologists and sociologists in the subject area that has tended to keep economists out of this field”. In support of this statement, it was also noted that as far as forced migration is concerned, “... economics might be a candidate...” (Jacobsen & Landau, 2003, p.186) and Ruiz and Vargas-Silva (2013) noted that the application of economics to forced migration is still in its infancy.

In addition to the afore-mentioned deficiency in existing literature, much has been written on dam-induced displacement and conflict-induced displacement, but little is currently known about mining-induced displacements, yet Hoadley (2008) and Terminski (2012; 2013) noted that displacement induced by mining is very significant the world over. Among the few studies on the effects of mining projects' are Vesalon and Cretan (2012) who focused on Romania. However, the two aimed specifically on examining the complexity of the consequences of DIDR. Kemp, Owen and Collins (2017a) also focused on mining but only on the operationalisation of international commitments. With that in mind, the current study contributes to the existing

knowledge by using displacees in Arda Transau, thus, being in line with Cernea's (1996a) observation that consequences vary with local circumstances, hence case studies remain crucial (Cernea, 1995a). Therefore, one of the major contributions of this research is to explore the consequences of mining-induced displacement from an economics perspective thereby responding again to the long-overdue calls by Cernea (1995a; 1999a), Dwivedi (2002) and Caspary (2007). Owen and Kemp (2015) also noted that mining-induced displacement and resettlement is unique in various ways such that it deserves greater attention. One such uniqueness is that with mining-induced displacement, the resettlement of people can take place at any stage of the project. Also, the effects may be felt well after the miners have left the area.

Also, the few existing studies on internal displacement from economics have mostly not focused on the issues underlined by Cernea (1997a) in his IRR model. Therefore, the thesis, though, with an economics bias, mainly hinges on the IRR model focussing on the IRR model variables though some additions have been made.

What makes Arda Transau area suitable to be studied is that the IDPs were allocated land and houses. Moreover, the possibility of future displacements is minimal, meaning the IDPs are likely to remain in Arda Transau for a long time, unless if one decides to relocate on their own. Moreso, the set-up in Arda Transau looks more urban than in Chiadzwa hence the IDPs are more like in an urban area for certain reasons, one of them being reticulated metered water and the type of settlement. All these feed into the consequences of internal displacement, either being positive or negative depending on the perspectives of the affected persons. Thus, the perception of urban life to someone familiar with rural life for the large part of their life has implications on reported economic consequences and other subsequent risks.

Understanding the economic consequences of internal displacement, defined in the thesis as referring to costs, risks or benefits derived from displacement, is important for different reasons. Firstly, resettlement policy formulation must consider not only relocation but the attendant consequences. Secondly, development-induced displacement is premised on the need to develop but if development leads to displacement which again leads other people to be worse off, especially without rehabilitation, then inclusive growth becomes a nightmare. Again, Cernea (1996a) acknowledges that, although there may be common features, consequences of forced

migration vary with local circumstances. This means that although many have been or are being displaced, the consequences attributed to displacement may be the same or different depending on local circumstances. Cernea (1995a; 1995b), therefore, noted that case studies must remain a staple in research especially research on displacement. To this end, therefore, there is a need for responsible authorities to know the attendant mining-induced economic consequences, peculiar to each area and find ways of minimising such costs thereby using a development-led approach to displacement. Lastly, the consequences must be known, in advance, by those who may be relocated and those in host communities, to make these people know of the likely risks involved if they are consulted.

1.6.2 Contribution to Literature on Economic Activities among IDPs

Displacement is inevitable in development project areas and its consequences are inevitable as well. Despite this fact, the affected people have to survive. The question is “[h]ow do they make a livelihood faced with these consequences?” Research interest among the majority of existing literature concentrated on coping strategies of camp residents excluding mostly those of IDPs who are not in camps such as IDPs who are there to stay like those in Arda Transau. Among the majority of research that has concentrated on economic activities of IDPs in IDP camps include Bozzoli, Bruck and Muhumuza (2011), however, Bozzoli *et al.* (2011) acknowledged that little attention has been paid to economic activities of the displaced households. The other avenue concentrated on is the coping strategies of forced migrants who have experienced conflict, for instance, civil war such as IDPs in Mozambique by Bruck (2004) and Bruck and Danzer (2007) and Uganda by Bozzoli *et al.* (2011). And even more, literature also concentrates on coping strategies of refugees, for instance, Khawaja *et al.* (2008). Therefore, the literature on economic activities among mining-induced displacement is still scant. As a result, the thesis contributes to the body of knowledge by extending existing literature using coping strategies among mining-induced displacees in Arda Transau. The case of Arda Transau is unique in that the IDPs are mining-induced and are not in camps but are in the newly resettled area with no possibility of returning or being displaced again soon.

Also, most of the existing literature on coping strategies has largely ignored the determinants of the choice of particular activities but concentrated more on how the strategies are employed, for

example, Rashid, Langworthy and Aradhyula (2006), Bello, Daoud and Baig (2014) and Israel and Briones (2014). Thus, another main point of departure or entry for this study is on what exactly determines the choice of particular livelihood activities among IDPs in Arda Transau.

Understanding the economic activities among IDPs is important for two main reasons. Firstly, unfettered acceptance of mining-induced displacement may not only lead to economic risks such as unemployment and food insecurity, but also disruption of household economic activities like agricultural activities. Secondly, the knowledge of type and combination of economic activities among the displaced enables policy-makers to assess the probability of rehabilitation of the displaced. Economic activities in post-relocation period may be a good indicator of potential rehabilitation with erosive coping strategies indicating low or no possibility of rehabilitation. Again, the combination of economic activities may show the level of resilience to risk with less diversified economic activities indicating low resilience to economic shocks.

1.6.3 Contribution to Literature on SWL

Diener, Sapyta and Suh (1998) claim that happiness or SWL is very important as a goal in life and, therefore, Anielski (2007, p. xvii) noted that happiness is "...our genuine wealth" with wealth being defined as "... the conditions of well-being" (Anielski (2007, p. xviii). Earlier on Hicks (1975, p. 223) had noted that "... Welfare is the Wealth of Nations". With that understanding, Adler and Dolan (2008) noted that happiness is more important than income. Despite this importance and SWL being a genuine wealth, Ferrer-i-Carbonell (2013) acknowledged that economists have not done much about this important study area. Also, Pavot and Diener (1993; 2009) argue that the cognitive component of subjective well-being, that is, satisfaction with life, has generally received less attention in research. Yip *et al.* (2007) also share the same sentiments that research on SWL is lagging by arguing that little has been done especially in developing nations, particularly on the social capital front as a determinant of well-being. Additionally, Stutzer and Frey (2012) agree that little has been done on subjective SWL by showing that between 1986 and 2011 only 146 articles were published by EconLit on subjective well-being. Earlier on Frey and Stutzer (2002) and later on, Ferrer-i-Carbonell (2013) also show that economists have relegated the study of happiness to psychologists among other disciplines with Ferrer-i-Carbonell (*ibid*) indicating that psychologists have been grappling with happiness studies for close to forty years. Furthermore, those studies that have been done by

economists have concentrated on the developed economies sidelining the developing ones (Yip *et al.*, 2007). Given the importance of happiness as a life goal, identified by Diener, Sapyta and Suh (1998) and the scarcity of economics literature on happiness, the thesis tries to close the identified research gaps.

Another major contribution of the current study is that very few studies have been done on satisfaction with life among internal displacees, particularly mining-induced displacees. The majority of studies in the forced migration literature focuses on refugees, for instance, Colic-Peisker (2009) and other disaster-related displacements like floods (Van Ootegem & Verhofstadt, 2016). Also, some authors like Getanda, Papadopoulos and Evans (2015) have concentrated on the mental health of the displacees, unlike the current study which concentrates on what determines SWL among IDPs.

The thesis also explores displacees' satisfaction with life before and after displacement. The argument posed is that after being forced to migrate, people feel the impacts of that forced migration and this affects their satisfaction with life especially cognitively. Thus, the study focuses specifically on the cognitive aspect of subjective well-being which is SWL. The thesis also emphasises the bottom-up approach to subjective well-being where well-being is studied from the experiences of the person concerned. The bottom-up approach is superior to other approaches such as the top-down approach (Erdogan, Bauer, Truxillo & Mansfield, 2012; Gataūlinas & Banceviča, 2014). In the bottom-up approach, subjective well-being is argued to be an accumulation of pleasurable moments (Ho, Cheung & Cheung, 2008).

Another major concern of the thesis is to compare life satisfaction between two periods, that is, to compare pre-and post-displacement life satisfaction, with post-displacement satisfaction with life being divided into current and future life satisfaction. This comparison is necessary because life events, for instance, displacements, are likely to change life satisfaction among individuals in a similar way that illnesses do. Hence, in this regard, a comparative aspect is necessary to find out how life satisfaction changed due to displacement. Comparison across time is not a difficult task given the Temporal Satisfaction with Life Scale used in this study because the displacees have been exposed to both lives, past and present. From the Temporal Satisfaction with Life

Scale, respondents are also expected to predict their future life satisfaction, hence future satisfaction with life will also be determined in this thesis.

In short, the study contributes to existing literature through three key ways: Firstly, SWL is important as a genuine wealth in any economy, hence several governments aim at attaining this. However, despite this importance, scarce literature exists in developing countries, therefore, the thesis is based on a developing country's experiences. Secondly, economists have been generally sidelining this aspect of development although other disciplines such as psychology have paid particular attention, yet economists are mostly concerned with welfare maximisation but they have ignored maximisation of the genuine wealth which contributes to that welfare. Lastly, happiness studies have generally not included displacees, especially development-induced displacees in general and mining-induced displacees in particular, with much focus being on other forced migrants.

Understanding the level of life satisfaction among IDPs especially in post-displacement periods is important for various reasons. Firstly, for current policy purposes, this large group of individuals cannot afford to be ignored because they can help significantly contribute to national development. So it is imperative to study the life satisfaction among internal displacees and determine which factors explain their life satisfaction in a bid to take measures to improve satisfaction with life since happy people tend to be productive (Keyes, 2006; Zelenski, Murphy & Jenkins, 2008; Ivlevs, 2015; Arora & Rada, 2017), hence the society will flourish (Anielski, 2007). Secondly, for the future, understanding life satisfaction among IDPs helps future policy formulations in that the policymakers will understand the likely policy impacts and the results in life satisfaction. This knowledge will help in designing policies that take the likely impacts into account thereby mitigating and or militating against SWL losses that might be incurred due to displacement. Thirdly, it is important to note that, from welfare economics perspectives, happy citizens tend to have a more desirable life than their unhappy counterparts. Thus, studying life satisfaction among IDPs will yield a positive move in improving IDPs' lives and that of society at large. Lastly, it is important to note that subjective well-being also has effects on individuals' productivity, physical health and enhanced social skills (Ivlevs, 2015). Thus, a happy society tends to be physical health as well, with physical health being a key input in human capital and the production function of any economy, the economy flourishes.

1.7 Organisation of the Rest of the Thesis

The thesis addresses three main issues related to mining-induced displacement, *viz*, economic consequences, choice of economic activities and satisfaction with life among displacees. To attain this, the thesis is made up of seven chapters. The first Chapter gave an overview by outlining the background and the guiding problem statement of the study and the contribution to existing literature. Chapter Two of the Thesis reviewed relevant literature relating to the consequences of displacement, choice of economic activities and SWL among forced migrants. The Chapter is, therefore, divided into these respective subsections. Additionally, methodologies employed in the thesis are outlined in Chapter Three following the format of Chapter Two. The findings from the thesis and their discussions are reported in three Chapters, *viz*, Chapters Four, Five and Six. While Chapter Four presented the results and the discussion on economic consequences of mining-induced displacement, Chapters Five and Six report on the findings on economic activities and satisfaction with life, respectively. Finally, conclusions and recommendations are given in Chapter Seven.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The literature reviewed in this chapter is categorised into three main categories as guided by the objectives of the thesis. The chapter starts by reviewing the literature on the consequences of displacement. Secondly, Section 2.3 reviews the literature on economic activities among forced migrants. Again, satisfaction with life and its determinants are reviewed in Section 2.4. Finally, the summary of the literature reviewed is presented in Section 2.5.

2.2 Consequences of Internal Displacement

The consequences of displacement have been extensively written on from an anthropological perspective by Cernea. Taking cognisance of the few studies from other disciplines other than anthropology, this section reviews the literature about the consequences of forced migration, both relating to refugees and internal displacees to extract relevant variables considered as economic consequences of forced migration. Since displacement has various dimensions, the thesis firstly distinguishes these dimensions. Of significance is that internal displacement comes in various forms which may be conflict-induced, development-induced and natural disaster-induced, among others. Also, development-induced displacement is, by nature, involuntary (Mooney, 2005). Thus, the typology of displacement is presented before theories and consequences of displacement.

The consequences of displacement literature reviewed here is also guided by the IRR model by Cernea (1995a; 1997a) which outlines about eight risks associated with displacement. However, Cernea acknowledged that his model is built around Scudder's model hence the Scudder model is briefly reviewed as well. Cernea also acknowledges that despite these eight generic risks, there are others therefore another section on some of these other consequences has been included in the review.

In short, this section is organised as follows: Firstly, the typology of displacement is outlined in which an outline is made of comparative typologies. Secondly, the causes of displacement which may be development-induced or conflict-induced displacement, among others, are discussed. Theories of displacement come after the presentation of the causes. Subsequently, the

consequences of forced migration are discussed firstly concerning Cernea's (1997a) model and secondly others not included by Cernea. Finally, a conclusion is given.

2.2.1 Typology of Displacement

People are displaced and or resettled for various reasons. The forms of displacement range from development-induced to conflict-induced. This brings the various dimensions into which population displacement can be placed. For clarity, a group by group comparison is used in the thesis. However, there seems to be an overarching dimension which relates to voluntary migration as compared to involuntary migration. The other forms seem to be related and feed into these two. For instance, development-induced displacement is involuntary in the sense that migrants are forced to migrate to pave way for development projects. Again, although the term internal migrants include IDPs, internal migration might be voluntary while internal displacement is forced migration. Also, whether a migrant is a refugee or an IDP depends on whether they have crossed international borders giving them refugee status or not thereby being termed IDPs.

a) Voluntary versus Involuntary Migration

One way to classify migrants is according to whether the movement is voluntary or involuntary. Anthropologists usually classify factors causing population movement according to pull and push factors (Asthana, 1996). Under voluntary migration, populations move on their own will without being pushed, for example, by unbearable circumstances that lead to their loss of livelihoods. Thus, voluntary movement of people is due to the natural desire to move from one place to another for reasons such as better employment opportunities and favourable climatic conditions. An example of such migration is rural to urban migration. Under this classification, people move because of pull-factors in the destination area (Asthana, 1996). It is imperative to note that young families or age groups are the most likely group to be engaged in these movements in search of greener pastures. Also currently single people are more likely to migrate than married ones (Piguet, 2018) possibly because of the joint decision-making process as explained by the theories from the new economics of labour migration.

Contrastingly, with an involuntary movement, people migrate because they cannot withstand the prevailing situation in the area in which they are residing or they are forced to move by the

government or other parties concerned. With this type of migration, one can note that both development- and conflict-induced displacements are found. With involuntary migration, migrants are pushed away or uprooted from their place of habitual residence. In some cases, anxiety and insecurity are the major factors leading to involuntary population displacement.

Within the pull-push factors conviction to migration, several theories have been proposed, two among the many are the neoclassical equilibrium perspective and the historical-structural theory. Within the neoclassical equilibrium perspective, migration occurs as people respond to differences in wages and population densities between the destination and sending areas (Massey *et al.*, 1993; de Haas, 2007). The differences in wages will be resolved in a Heckscher-Ohlin type model of factor-price equalisation. The convergence of expected wages between the sending and receiving locations is the predictions of the popular Harris-Todaro (1970) model of migration. Of note is that the Harris-Todaro model was initially meant for internal migration, hence it may be applicable in this study on internal displacement. Again, it is imperative to note that the neoclassical perspective to migration is based on the assumption of a rational agent (Kurekova, 2011; Piguet, 2018) who acts to maximise returns (income and utility, among others) while also minimising risk. Therefore, an optimisation approach is assumed to be used by the agent. However, Piguet (2018) noted that migrants do not have all the information, hence can be taken to act in a bounded rationality approach.

Concerning the historical-structuralist theory, de Haas (2007, p.15) noted that

[h]istorical-structuralists postulate that economic and political power is unequally distributed among developed and underdeveloped countries, that people have unequal access to resources, and that capitalists expansion has the tendency to reinforce these inequalities. Instead of modernizing and gradually progressing towards economic development, underdeveloped countries are trapped by their disadvantaged position within the global geopolitical structure.

In this theory, migration is viewed as a function of globalisation (Kurekova, 2011). What this, therefore, means in the context of development-induced displacement is that those individuals without economic or financial and, or political power are likely to be forced to move because they lack the resources to defend their position. de Haas (2007) also noted that, as a result of

resource constraints, individuals have no free choice, therefore, leading them to be forced to migrate. Again, in most cases, development-induced displacement is initiated by owners of capital who, in the case of most developing nations in need of foreign direct investments, are multinational or transnational companies. Therefore, through globalisation, these companies find themselves displacing households from households' native homes so that they (the companies) may extract resources from the places or do other development projects such as plantations.

As a form of conclusion, migration can be classified as either voluntary or involuntary. However, Nayak (2000) viewed migration as only involuntary. In support of this view, Nayak (2000) argued that for one to migrate there must be something detrimental to one's livelihood in a certain context. This is analogous to the predictions of the Tiebout (1956) voting with the feet model. In the Tiebout (1956) model, people migrate from one location to another because the supply of local public goods in that location does not meet their preferences. Therefore, without any detrimental reasons, an individual is compelled to remain in a certain location. For instance, under the pull-push dichotomy, the push factor is the detrimental reason for migration while the pull factor is the expected gain in the host community.

b) Development-Induced Displacement and Resettlement (DIDR) versus Disaster-Induced Displacement

Another way of classifying migrants is based on whether they have been forced to migrate because of development projects or disasters. Whereas development-induced displacement is usually permanent, disaster-induced displacement might be temporary. Whenever there is a development project, displacement is inevitable. Cernea (1997b; 1997c) concurs that when a development project is initiated its intention is never to displace people, however, displacement becomes inevitable. Thus, development-induced displacement is the displacement of people to pave the way for development projects like dam and road construction as well as mining activities, *inter alia*. For example, mining-induced displacement occurred when Chiadzwa was designated a diamond mining area. The same also happened when Murowa Diamonds relocated even graves (Terminski, 2012). In Ghana, when Tarkwa District was designated a mining area, several people were displaced just like when Bui, Kpong and Akosombo Dams were constructed.

With development-induced displacement, the major claim is that the majority of the people in the country or area are likely to gain despite the minority who will be moved. Thus, displacement will be justified based on the Benthamite argument of the greater good for the majority where the number likely to benefit is larger than that likely to lose (Bentham, 1823). This is popularly known as utilitarianism or the greatest happiness principle (Bentham, 1823; Mill, 2001; Arrow, 1948; Jacobson, 2003). Therefore, the neoliberal economics arguments for land grabbing are used in defence of development-induced displacement because displacement will be expected to benefit a huge number compared to those who will lose in line with the greatest happiness principle.

Unlike development-induced displacement, disaster-induced displacement comes in two major types, namely, conflict-induced and natural disaster-induced displacement. Conflict-induced displacement entails moving people (or people moving on their own) away from the conflict-prone zone. Conflict in this context is usually associated with war or political instability. Colombia is among the countries most affected by conflict-induced displacement (Muggah, 2000; Engel & Ibanez, 2007; Iregui-Bohorquez, Ramirez-Giraldo & Tribin-Urbe, 2019). Natural disasters also lead to population displacement and such natural disasters include famines. Zimbabwe is one such country affected by natural disasters causing population movements. In 2017, Cyclone Dineo displaced 2000 people of which 855 lived in temporary camps (United Nations Office of the Resident Coordinator, 2017). Also the cyclone left 251 people dead (United Nations Office of the Resident Coordinator, 2017). Again, in Tsholotsho, families had to be moved to safer grounds away from Gwayi River which had overflowed its banks. This type of disaster was also previously experienced in Zimbabwe in 2000 in the Cyclone Eline disaster which was also associated with mass movement (landslides). Recently, in early 2019, Cyclone Idai led to the loss of lives and property and population relocations (UNICEF Zimbabwe; 2019) in Chipinge, Chimanimani and some parts of Masvingo. While both development-induced and disaster-induced displacements are associated with losses of assets, disaster-induced displacements go beyond by being again associated mostly with life losses. The two can, however, be taken as sub-types of involuntary displacement.

c) Internal Displacees versus Refugees

The other dimension into which population displacement can be categorised is according to whether displacees cross international boundaries or not. From this dimension, the literature identifies two groups of displacees *viz* refugees and internally displaced persons. OCHA (1999, p.6) states that

... internally displaced persons are persons or groups of persons who have been forced or obliged to flee or leave their homes or places of habitual residence, in particular as a result of or to avoid the effects of armed conflict, situations of generalized violence, violations of human rights or natural or human-made disasters, and who have not crossed an internationally recognised state border.

To Mooney (2003; 2005), IDPs can be termed, internal refugees. Therefore, IDPs remain under the jurisdiction of their country of origin. Mooney (2005) argues that internal displacement is involuntary. The African Union, through the Kampala Convention (2009), also highlights that internal displacement is by nature involuntary or forced migration, possibly because terms such as uprooting are used synonymously to displacement. Contrary to IDPs, refugees cross the recognised international borders thereby falling under a different state and its laws. According to Cernea (1990), refugees are not a result of development projects. Debate on whether the two groups must be treated differently has been raging on for some time (Cernea, 1990). One avenue used to distinguish between the two is whether IDPs must be entitled to aid from the international humanitarian community. Under this view, IDPs are supposed not to be treated differently from others in that country since they still fall within the jurisdiction of their respective governments while refugees are expected to get assistance because of their non-native nature and circumstances leading to their migration.

While internal displacement is considered to be involuntary, refugees are considered to be a result of either voluntary or non-voluntary migration. For instance, refugees might be running away from political instability in their home country, thereby being involuntary migrants. Contrastingly, they may be pulled by economic stability in other countries resulting in what may be termed, economic refugees. In the context of Nayak (2000), however, all these are involuntary migrants because there is something detrimental that leads someone to migrate.

From the above discussion, one can note that despite being categorised into various dimensions, population displacements are intertwined. The consensus is, however, on the fact that mostly the term displacement connotes involuntary migration. The thesis, therefore, is concerned with internal displacement, particularly mining-induced internal displacement, which is an understudied area (Owen & Kemp, 2015), yet Hoadley (2008) indicates that displacement induced by mining is very significant worldwide and Terminski (2012; 2013) concurs with Zimbabwean examples as well. From, the above discussion, it is possible to deduce that displacement is caused by various factors. Thus, the next sub-section discusses these causes in detail.

2.2.2 Causes of Internal displacement

Having classified migrants according to the forces leading to their movement in the previous section, this section analyses the causes of displacement in detail. Many causes of displacement have been highlighted in the literature. Oucho (2005) highlights two major categories in which internal displacement can be put, *viz* disaster-induced and development-induced displacement. These two, however, have their sub-categories, for instance, development-induced displacement encompasses mining-induced displacement, dam-induced displacements, plantations-induced displacements and displacements resulting from wildlife conservation, among others. This section discusses the two main causes of displacement as identified by Oucho (2005) which are development projects and disasters. These are part of a broad category called involuntary migration.

i. Development Related Displacements/Development-Induced Displacements

Development-induced displacements are displacements of individuals to pave way for development projects. Thus, mining-induced displacement is one such example of development-induced displacement. Hoshour and Kalafut (2007) also identify several development-induced displacements causes chief among them being water supply, energy (mining included), large mono-crop plantation (sugar-cane was given as an example) and urban infrastructure. Among mono-crop plantations, jatropha plantation has also become significant in population displacements such as in the case of Ghana (Agbley, 2019).

Vandergeest (2003) argues that any project that reorganises the meaning and use of space will lead to the displacement of people. The author argues that even if it is a small project, as long as it involves reorganising land use, it will mean that displacement is inevitable. Dam construction is a good example of the causes of development-induced displacement. In Africa in general, and Zimbabwe and Zambia, in particular, this has been experienced when the Kariba Dam was constructed and 57 000 people were displaced (Hughes, 2006; Cernea, 1997a; Stanley, 2004). For Zimbabwe again, MacDom and Rating Investments displaced 250 000 communal farmers, both for the Greenfuel plant and plantation of sugar cane (Makombe, 2013). Matondi and Nhliziyo (2015) noted that because of absence of clear land rights, conflicts such as the one between the Chisumbanje displacees and Greenfuel could be avoided. The Merowe Dam construction in Sudan is another case in point cited by Gross (2008) while the Akosombo Dam, Bui Dam and Kpong Dam projects in Ghana cannot also be ignored (Yankson *et al.*, 2016; Koranteng & Shi, 2018). All these development projects led to massive displacement of households such as 80 000 people in the Akosombo Dam project (Stanley, 2004). Mining, as a development project, has also caused significant displacements (Hoadley, 2008; Terminski, 2012; 2013). For instance, mining-induced displacement has been ongoing in Sierra Leone since the 1950s (Wilson, 2019). In Ghana, Tarkwa District's mining activities led to the displacement of about 30 000 people (Terminski, 2012; 2013; Aboagye, 2014).

ii. Disaster-Related Displacement

Another cause of forced migration is a disaster. Disaster-induced displacement also comes in various forms such as natural disaster-induced or conflict-induced displacement (Lwabukuna, 2011). Ibanez and Velez (2003) identified violence, both direct and indirect, as the major causes of displacement in Colombia. This has emanated from the fact that displacement in Colombia mostly results from political conflict. Related to this, Singh *et al.* (2007) identified threats and destruction of homes as the major causes of conflict-induced displacement in Nepal. Zimbabweans cannot be singled out as having suffered such effects. The protracted liberation struggle of the 1970s saw many Zimbabweans fleeing the country to neighbouring countries such as Mozambique and Zambia while some households relocated to other areas they perceived to be safe within Zimbabwe. Again during *Operation Murambatsvina* people lost houses when their homes were destroyed, confirming Singh *et al.*'s (2007) claim. Also, during the run-up to March

2008 elections and the consequent re-run, people were threatened and victimised under politically motivated violence, hence some fled their homes to become IDPs or refugees. That civil unrest leads to displacement was found to be prominent in Africa (Ferris, 2012). Similar cases of displacement include the eruption of Mount Nyiragongo in DRC in 2002 whose effects were even worse since the community was under the pressure of displacement because of civil unrest (Lwabukuna, 2011). Cases of natural disaster-induced displacement are common in Zimbabwe with cyclones taking the centre stage, for instance, the devastating cyclones, namely, Eline in 2000, Dineo in 2017 and Idai in 2019, among others.

Conclusively, disaster-induced displacements may be man-made or natural disaster-related. Man-made disasters mostly are a result of political instability while natural disasters are the act of nature. Both, however, result in involuntary migration.

2.2.3 Theories of Forced Migration

Just like causes of displacement, several theories of migration exist. The Scudder-Colson model has, however, greatly influenced resettlement literature (Asthana, 1996). Additionally, Vivoda, Owen and Kemp (2017a) noted that there are two foundational models related to development-induced displacement and resettlement *viz* the Scudder-Colson model and the IRR model by Cernea. Therefore, before moving to the consequences of displacement as propounded by Cernea (1995a, 1997a), the thesis briefly introduces the prominent Scudder-Colson model with the understanding that the model was initially meant for voluntary migration. The IRR model by Cernea (1995a; 1997a) will, therefore, be dealt with under the consequences of internal displacement.

i. Scudder-Colson model of Migration

Among the many development-induced displacement migration theories, the Scudder-Colson theory is probably the first to be propounded and most cited. Although being the most prominent, it was initially meant for voluntary migration. Scudder and Colson (1982) identified four stages through which resettlement passes. Although popularly known as the Scudder-Colson model, Scudder (1985) acknowledged that the model was built on Robert Chambers' three-stage framework. Scudder (1985) and Vivoda, Owen and Kemp (2017a) concur that the Scudder-

Colson model was only applied to successful development-induced displacement that passed through its four stages. Although presented as stages, Scudder (1985) noted that these may overlap and at times stages three and four may be interchanged with these two stages being crucial for increasing disposable incomes of those displaced. Scudder argues that for a development project to realise its development potential, ideally it has to pass through all these stages, but passing through the stages has been an exception rather than the rule and that many sponsored projects rarely reach stage three. The four phases are briefly explained in this thesis.

1. Planning, Initial Infrastructural Development and Settler Recruitment

In this phase, policymakers are concerned with developing resettlement plans. These policymakers at times carry out their feasibility studies, but more often, development and resettlement plans are put in place without the knowledge of those to be displaced (Erdiaw-Kwasie *et al.*, 2014; Panigrahi, 2018). Chiruguri (2015) and Vivoda, Owen and Kemp (2017b) acknowledge that this failure to notify the to-be displaced people occurs in the majority of cases. Non-consultation of the displacees, when planning development projects which cause displacement, have resulted in impoverishment among displacees and resistance to displacement (de Wet, 2002). Also, Scudder (1985) acknowledges that in most cases not enough land tenure considerations are made for the displacees during these feasibility studies, although for the host community there may be that consideration. Possibly, not considering land tenure issues among the to-be IDPs is informed by the government's use of the power of eminent domain (Vivoda, Owen & Kemp, 2017b).

In this phase also, considerations of the type of settlement to be established are made. These include access roads to the settlement site and irrigation structures. In this stage, again, emphasis must be placed on the type of economic activities that the settlers are likely to engage in after relocation. This emphasis on IDPs facilitates rehabilitation of the displaced people. However, failure to include the affected people in the planning stage may act as a hindrance for their rehabilitation, possibly because the infrastructure in place will be inappropriate for the IDPs' income-generating activities. Again, the acceptance of the projects may be difficult because IDPs would not have been consulted at the planning stages.

2. Transition

Under the transition phase, the to-be displaced are informed of the intended displacements (Erdiaw-Kwasie *et al.*, 2014; Panigrahi, 2018). Tensions are likely to rise as people become aware of the planned relocation and possible losses they will incur in the process. People will be in the transition phase from their usual place to the new place to which they will be displaced. According to Scudder (1985), transition phase starts from the time one is moving from one habitat area to another and includes the period immediately after arrival. Scudder notes that the transition phase differs according to individual families with some having a transitional period of one year while others may extend to more than five years.

In the transition phase, Scudder (1985) notes that families are usually risk-averse, therefore, few adoptions are taken on board. Scudder treats risk aversion as a coping strategy during and after resettlement. Again, communities in transition stages tend to prioritise meeting subsistence needs and try to transfer their economic activities to the new location even if the activities may no longer be suitable and feasible. Subsistence needs may be treated as basic needs in the context of Maslow (1943) and Doyal and Gough (1991). Therefore, migrants are likely to use their previous economic activities for sometime until a time they realise that the activities are no longer viable. Scudder suggested several ways of shortening the transition stage, for example, recruiting settlers from the same locale (Scudder, 1985).

3. Economic and Social Development

In this stage, the displacees are now in post-displacement location. They start to build their society and rebuild their social capital again (Erdiaw-Kwasie *et al.*, 2014; Panigrahi, 2018). This potential development stage is associated with integration into the economy of the host community. According to Scudder (1985), while the second stage is made up of risk-averse individuals, the third is made of risk-takers. Instead of being in subsistence activities only, families engage in diversified activities to make a living thereby increasing production in the settlement area. For instance, they may engage in both cash crop and livestock production. Because of this, additional land may be required forcing families to reclaim, sharecrop or purchase land with Sadoulet and de Janvry (1995), Singh (2000) and Norton, Alwang and Masters (2010) claiming that sharecropping reduces risk through risk-sharing. Therefore, in this

stage, necessary actions are needed to enhance capabilities for potential rehabilitation. Capabilities refer to what people can do and what they can be (Nussbaum, 2003; Sen, 1993; 2008). In simple terms, capabilities are real opportunities (Schokkaert, 2009). Given the effects of displacement, capabilities loss cannot be ruled out. For instance, by losing income people lose their freedom to buy commodities which is analogous to what Sen (2008) calls capabilities. Therefore, there is need for capabilities enhancement in the new resettlement area.

4. Handing over and Incorporation

Handing over occurs in the second generation (Erdiaw-Kwasie *et al.*, 2014; Panigrahi, 2018). In this phase, Scudder (1985) may have been saying the displaced now take some control of the settlement itself. Thus, displacees will now accept displacement as reality and possibly irreversible. When handing over takes place, the next generation is considered somehow comfortable with the area and therefore feels at home, unlike the first generation which has a memory and connection with the previous location. This connection is what has been termed place attachment in well-being literature. It, therefore, may mean that both the displaced and host community, in this phase, now consider each other as one since the whole generation grew in the same vicinity. Although there may be connotations of foreignness, these will be minimal to such an extent that it becomes insignificant, thus Scudder (1985, p.167) says at this stage “...the project is incorporated within the encompassing region” possibly implying that project displacees’ economic activities are now part and parcel of the community now made of the host and displaced people.

However, Scudder (1985) argues that handing over may become a problem. One of the problems associated with handing over to the new generation is that many of these children may not wish to take over from their parents. Because of these children's own life goals, the settlement may be inhabited by an ageing population. Another potential problem is handing over too early or too late. Handing over too early may result in the project's expected benefits not being realised because of certain problems that may be solved by delaying handing over (Scudder, 1985). For example, Scudder (1985) cites the example of Mwea project in Kenya where health services broke down frequently because of early handing over. The author also cites the Gezira Board in

Sudan as a case where late handing over led to resistance from devolution of management functions. This became a hindrance to the further development of the project (Scudder, 1985).

5. Conclusions on the Scudder-Colson Model

Mounting evidence on the consequences of internal displacement led authors to question the applicability of the Scudder-Colson model of migration. Vivoda, Owen and Kemp (2017a) and Panigrahi (2018) indicated that this gave birth to the IRR model by Cernea (1995a; 1997a) whose main objective was to identify the risks associated with development-induced displacement based on the principles of equity, human rights and social justice. With the Scudder-Colson model focussing on the behavioural or psychological dimension of displacement, the IRR model's principles are equity, human rights and social justice (Vivoda, Owen & Kemp, 2017a). Chiruguri (2015) argues that by ignoring effects on the displaced, the Scudder-Colson model seems to indirectly encourage displacement.

ii. Consequences of Internal Displacement: The IRR Model

Cernea's various writings on internal displacement are central in understanding the consequences of displacement. This is evidenced by his vast writings on internal displacement dating back to the 1980s and the development of the popular impoverishment risks and reconstruction model. However, his writings are mostly from a sociological or anthropological argument with the major focus being the principles of equity, human rights and social justice. Cernea (1995a; 1996a; 1997a; 1997c) identified eight major risks or consequences of internal displacement. For example, he argued that when there is displacement; people lose their long-established residential communities, trade linkages are disrupted, where producer-customer interaction is affected (Cernea, 1996a). At the same time, settlements are normally disorganised and life-sustaining social networks are rendered non-functional due to displacement. In economics, life-sustaining social networks may be termed social capital in that relationships matter in life.

According to Cernea (1996a, p.1518), “[m]any anthropological and sociological field studies have documented the qualitative consequences of forced displacement in vivid detail ...”. He went on to acknowledge that the consequences vary with local circumstances, although there are common features. This may mean that although many have been displaced long back, the

consequences they faced may be the same or different from today's displacement consequences. The common feature that the displacees may share is the onset of impoverishment. The local circumstances in Cernea's statements may also be taken to mean the circumstances leading to displacement such as being dam-induced or mining-induced displacement. Given this, Cernea (1995a; 1995b) argues that case studies must remain a staple in research on resettlement.

Various consequences of displacement have been highlighted in the literature. Cernea (1995a; 1996a; 1997a; 1997c; 2000) and Muggah (2000) argue that DIDR has at least eight generic consequences, explained by the Impoverishment Risks and Reconstruction (IRR) model, as outlined and explained in this thesis.

1) Landlessness

The first and most prominent consequence of displacement, according to Cernea (1997a), is landlessness. In the context of this study, landlessness is defined mostly as loss of productive land owned by IDPs. Landlessness is sometimes defined in terms of just expropriation of land (Cernea, 1995a; 1997a; 2000; 2004). Cernea (2003) uses the term "investors of equity" to refer to households who lose land to development projects which, according to investment principles, accords the IDPs some share from the project because they are investors. That those who lose land are investors may also be taken from the fact that land is considered as natural capital in the sustainable livelihoods framework (DFID, 1999). The term, investors of equity, may be connoting the fact that the displaced lose their land to developers under the assumption that benefits accruing from the use of the land will be distributed equally in the country or area, which is in line with the utilitarianism principle of greatest happiness principle (Bentham, 1823; Mill, 2001; Arrow, 1948). However, in Africa, personal identity is tied to land owned (Mburugu, 1994) implying that by relocating households, one is taking away the identity of the displaced. With land being a key asset, especially in rural households, its loss is detrimental to households' lives. For instance, because most rural households are peasants, loss of land leads to food insecurity (Yankson *et al.*, 2017) and loss of farm income. Semi-subsistent farmers who grow crops to earn an additional income lose that income after displacement. Additionally, Nayak (2000, p.80) notes that "[l]andlessness ... occurs as a consequence of the alienation of people from the land..." and that "[l]andlessness is a social hazard ...". Therefore, because these people's

livelihoods hinge on land, and Hughes (1958) says a man is judged by what he does and what he does determines his social identity, it means being landless leads to the loss of social identity as well. Again, from the statements by Mburugu (1994) and Nayak (2000), it may mean that by uprooting a person one will be taking away that person's social identity. Within sustainable livelihoods literature, the land is viewed as natural capital, therefore, uprooting people from their land is equally taking away their capital which impacts negatively on their capabilities.

In Cernea's context of landlessness, the productivity of land owned is mostly left out, for instance, he talks of adequacy and valuation of land, should compensation be made (Cernea, 1995b). Probably this is because of his general focus which is on social issues. This omission has potential problems like landlessness effects on food security may be difficult to evaluate since the loss of a large less fertile piece of land replaced by a small but productive piece may not lead to food insecurity emanating from landlessness. Thus, having a smaller piece of land may not always make a household vulnerable to food security shocks.

Although landlessness is a consequence of displacement (Cernea, 1995a; 1996a; 1997a; 2000), Cernea (1996b) notes that it may not be fully-fledged. Thus, while people may lose their pieces of land in some instances whereby they will be left with nowhere to carry out their agricultural or any other economic activities or be forced to a situation of no fixed abode, they may again be left with some other pieces to use. Such is most common in natural disaster forced displacement, for instance, the 2000 Cyclone Eline, Cyclone Dineo in 2017 and the 2019 Cyclone Idai, all in Zimbabwe and other surrounding countries, where some people lost part of their lands and others became fully-fledged landless persons. According to Oucho (2005), Zimbabwe is among the Southern African Development Committee (SADC) states to have suffered landlessness due to displacement wherein the majority of cases, people will have reduced landholdings especially after the relocation. Such instances may be the case among IDPs in Arda Transau. In some cases, however, those who used to have smaller pieces of land may get bigger landholdings, thus making displacement beneficial to the IDPs (Cernea & Schmidt-Soltau, 2003; Vanclay, 2017). Such may again be the case for clans displaced by the colonial regime in the 1890s who then went to recover their lands through fast-track land reform in Zimbabwe from the year 2000 onwards. The land reform strategy, however, was not successful in Laos where the collectivisation campaigns initiated in 1978 failed to redistribute land from the land-owning to

the land-poor (Vandergeest, 2003). In Zimbabwe, this may equally be true because of the possibilities of multiple farm-ownership. Evrard and Goudienau (2004) also noted that the settlement process in Laos brought unexpected further resettlement to result in what they called "... resettlement-induced forms of mobility" (Evrard & Goudienau, 2004, p. 937). In Zimbabwe, the land reform programme has led to displacement *in situ* (Magaramombe, 2010).

Cernea (1997a; 2000) argues that people's livelihood hinges on the land and expropriation of the means of livelihood will decapitalise the people. In the process of land loss, the people will lose both natural and man-made capital as Cernea argues. In Colombia, according to Carrillo (2009), around 55% of the displaced had land before displacement. Displacement led people to lose an average of 4 hectares of land which led to a national average of 1.2 million hectares (Carrillo, 2009). Also, a systematic review of literature in Uganda by Kamara, Cyril and Renzaho (2017) revealed land losses in that country. In the Zimbabwean scenario, Madebwe, Madebwe and Mavusa (2011) established that about 90% of IDPs in Arda Transau miss their previously owned arable land. Thus, under such displacement circumstances, landlessness cannot be denied to be a potential consequence of displacement.

In a conflict-induced displacement related case, people lost their land to warlords in the Philippines (Cagoco-Guiam, 2013). Interviews by Cagoco-Guiam (2013) revealed that farm sizes were reduced due to displacement and the displacees had to pay for use of some of these farms. Those from Cotabato city were victimised for loss of elections by a candidate since they were argued to be supporters of another contestant. Therefore, the whole clan that occupied the area had to relocate to another area for fear of victimisation. The same could be said about Zimbabwe's 2008 elections and the subsequent re-run where violence was allegedly used by the ZANU-PF party to the alleged supporters of the opposition MDC party. However, landlessness due to the alleged Zimbabwe's ZANU-PF violence was not largely experienced because most of the victims have returned to their places of habitual residence (IDMC, 2011; 2015a).

From the above arguments, one notes that land as an economic good has been lost by many IDPs. The loss of land has negative impacts on people's lives; for instance, it increases the food insecurity problem because productive land may have been lost, therefore, the displaced will have to worry about their next meal now and again. Furthermore, some people are semi-

subsistent farmers who grow crops even in excess to earn an extra income on the sale of those products. Thus, when their land is taken away, they will not be able to earn that income as was the case when the Kiambere Hydroelectric project led to the displacement of Kenyans (Mburugu, 1994). This complements the argument that landlessness cannot be ruled out as an economic consequence of displacement.

However, landlessness as represented by land size, as viewed by Cernea (195a; 1997a; 2000; 2004) and Carrillo (2009), may miss the point in economics. Only the loss of productive land must be considered landlessness. For instance, loss of a large unproductive land which is replaced by a small productive land leads to a question of whether the household is landless. Again, from the perspective of agricultural economics, which asserts the existence of an inverse relationship between land size and productivity as propounded by Sen in 1962 (Ahmad & Qureshi, 1999; Carletto, Savastano & Zezza, 2013; Kadapatti & Bagalkoti, 2014), loss of a large piece of land may not be an issue at all. This inverse relationship exists for three main reasons which are (i) imperfect factor markets (ii) omitted variables particularly land quality and (iii) issues of measurement of farm size (Sen, 1962; Barret *et al.*, 2010). Carletto *et al.* (2013, p.255) highlighted that "Imperfect factor markets (labour, land, insurance) are linked to differences in the shadow price of production factors that in turn lead to differences in the application of inputs per unit of land, in ways that are correlated with farm size". For labour, the imperfect market may imply the absence of off-farm employment opportunities. Also, small farms are more technically efficient than large ones (Ahmad & Qureshi, 1999; Masterson, 2007) and they are more sustainable compared to larger ones (D'Souza & Ikerd, 1996).

If the inverse relationship between farm size and productivity holds, as authors like Sen (1962) and de Haas (2007) seem to suggest, then IDPs may take advantage of that and increase their food production hence being food secure than before relocation. This assumption is important because the existence of imperfect factor markets, as a condition for the inverse relationship, have been found to exist in developing countries (de Haas, 2007). Thus, if the small land size owned is used intensively, production is likely to increase and the effects of loss of land will be minimised. From this analysis, therefore, when considering landlessness as a consequence of displacement, due consideration must be made to quality of land, in terms of its fertility, to minimise the possibility of generalising reduction in land size owned as implying landlessness.

2) Joblessness

Another consequence of internal displacement besides landlessness is joblessness. Joblessness refers to the loss of means of subsistence in this study. Means of subsistence, in this case, implies ways of making a living. Cernea (2000; 2004), however, defines joblessness in terms of loss of wage employment which leads to unemployment or underemployment. When displaced, people lose their jobs because they may have nowhere to work or their employer will be left behind as the IDPs are forced to migrate. Cernea (2000, p. 3664) also notes that

[i]n rural areas, landless labourers lose access to work on land owned by others (leased or share-cropped) and also lose the use of assets under common property regimes. Self-employed small producers-craftsmen, shopkeepers, and others- lose their small business.

In Zimbabwe between July 2000 and the year 2002, the Government of Zimbabwe instituted the Fast-Track Land Reform Programme (Nyawo, 2016) which led the majority of farm-workers to lose their jobs because of displacement of the farmer or both the farmer and worker. In line with this, Sachikonye (2003b) stated that the FTLRP led to 150 000 people losing their jobs. The figure rose to between 180 000 and 200 000 by early 2003 (Sachikonye, 2003b). This reduced the farmworkers' income since employment was their major source of income. One of the SADC countries, noted by Oucho (2005), to have suffered joblessness due to displacement is Zimbabwe. This is also evidenced by the farm-workers mentioned above. When houses were demolished under *Operation Murambatsvina* workers might have absented themselves from work and may have finally lost their jobs along the way. This is because, very few if any, people would go to work when they do not have somewhere to put their head. Thus, one would first seek accommodation before going to work.

At the same time when people are displaced, as argued by Cernea (1996a), trade linkages are disturbed. When a customer is displaced, the producer or seller will find himself or herself desperate for customers because the clientele base has reduced. This means that when the customer base is disturbed, the producer will be left with no option except to lay off some workers thereby resulting in joblessness. In another instance, the supplier may also be displaced. This will mean that this business owner will face problems, in the new environment, to re-

establish themselves, if ever they will. From the above, one can deduce that displacement has multiple effects on society.

In line with Cernea (2000), in rural areas, people sometimes find work on other people's farms. If both parties are displaced (the employer and employee), farm work is lost, thus depriving them of income as claimed by Cernea (2000). In Chiadzwa, some of the displaced used to run some small shops or illegally mine diamonds for a living while others used to do gardening for a living. All this stopped when the people were moved. The result is likely to be a lower income level and hence a low standard of living for these households.

Once a job is lost, getting another is as difficult as creating another one (Cernea, 1995a; 2000) especially in a country like Zimbabwe where there is generally high unemployment rate. Engel and Ibanez (2007) also noted that displacees often find difficulties in finding employment in the post-displacement location. This will mean that the person displaced will remain without wage-earnings for some time thus worsening the effects of displacement. Again, combined with landless, the effects of joblessness are even worse, especially for the rural folks. If the displacees had their land they would find something to do on the land to sustain their families. In some instances, the displacees do not lose a permanent job but will be moved from a place they will be self-employed to somewhere they will not be able to continue with their trade thereby resulting in unemployment again. Empirical evidence from Khawaja *et al.* (2008) shows that, for Sudanese refugees in Australia, unemployment was a consequence of displacement even before going to Australia. This evidence suggests that the consequences of displacement may be felt before the actual displacement takes place.

As explained above, joblessness has multiple effects on the displaced population. These range from losing permanent and or self-employment, loss of employment in other people's farms and loss of trade linkages, among others. Therefore, Asthana (1996) concludes that displacement affects joblessness more than it does to income.

3) Loss of Access to Common Property Resources

Cernea (1995a; 1997a) claim that when people are relocated, they also lose access to common property upon which the majority of the poor people depend. Such common property resources

include, but are not limited to, common grazing land, firewood, common forestry and medicinal plants (World Bank, 2012). In economics, goods can be grouped into several categories depending on their characteristics. One such classification depends on whether the good is non-excludable or rival in consumption. A good is non-excludable if the supplier cannot technically prevent consumption by non-payers whilst it becomes rival if the same unit of a good cannot be consumed by more than one person at a time (Nicholson & Snyder, 2008; Lepper & Freeman, 2010). On the one hand, excludability implies that the cost of preventing one person from using the said good is very low if ever it is there. On the other hand, non-rival implies that the "... the marginal cost of an additional consumer is zero" (Nicholson & Snyder, 2008, p. 680). According to Nicholson and Snyder (2008), a good which is both rival and excludable is called a private good while one that does not possess any of these characteristics is pure public good. Again, on the one hand, some goods may be rival but non-excludable or *vice versa*. Thus, with these characteristics, goods can be grouped into four categories as shown in Table 2.1.

Table 2.1 Typology of Goods

	Rival	Non- Rival
Excludable	Private Goods e.g bread	Artificially Scarce goods e.g. Pay per view TV channels like DSTV
Non-Excludable	Common Resources e.g. common grazing land	Public Goods e.g. National defence

From Table 2.1, one notes that a common resource or property is a good that is rival but non-excludable. This means that no individual can claim ownership of the property hence Cernea (1997a) termed these resources non-individual property assets which, by definition, belong to the community at large. On the other hand, goods which are non-rival but excludable are considered artificially scarce goods. The two groups (artificially scarce goods and common property

resources) combined are collectively termed impure public goods. They are so named because they possess at least one of the characteristics of a public good.

The interest of this study is on common property resources which, from Table 2.1, are goods which are rival but non-excludable in consumption. "The term 'common property resources' is used whenever some legal or customary conventions, other than private property rights, regulate the exploitation of the resource" (Perman *et al.*, 2003, p.125). Such goods include common grazing land where each herdsman has access to it without paying but continued access leads to rivalry in consumption. The result of this action is the tragedy of the commons as proposed by Hardin (1968), the term which is sometimes used to refer to over-use of a common property resource (Faysse, 2005) because of the "get it while you can" mentality. Thus, rational economic agents, of which everyone can be assumed to be (Arrow, 1963), whose use of the common resource is not regulated are likely to overexploit the resource (Hawkshaw, Hawkshaw & Sumaila, 2012). Therefore, Becker and Easter (1998) argue that the absence of well-defined property rights results in over-exploitation of resources which ushers in the tragedy of the commons. Similarly, as in the example of common grazing land given by Hardin (1968) and Becker and Easter (1998), internal displacement leads to the inflow of displacees into the host community, therefore, demand for common resources increases leading to non-optimum equilibrium use of the same resource because of the self-interest of each household which results from the free-rider problem.

In the context of forced migration, again, Cernea (2004) indicates that loss of access to a common property represents a loss of income and leads to livelihood deterioration. Once displaced, people lose the access they had to the common property such as common grazing land and water bodies. Grazing land in most cases, for example in rural Zimbabwe, is a common resource since it is usually owned by the community as a whole. That may be the reason why Cernea (1995a; 1996a) and other like-minded authors isolated it from landlessness and preferred to classify grazing land under common property resource because it can neither be classified as a pure private good nor can it be pure public good. Therefore, in the case of it being lost, it is the society as a whole which loses access to common grazing land and not an individual *per se*. Cernea (1997a) however, claims that the most affected are the poor because they heavily rely on these resources. Therefore, valuations of common property resources differ among individuals

depending on how the particular individual uses the resource. In most cases, livestock owners (cattle and goats, *inter alia*) feel the higher impact of the loss of common property access especially loss of grazing land. Like their owners, animals may starve, when their owners get displaced and animals are taken along. This starvation reduces the market value attached to these animals as well as retarded growth among the animals. As people take their animals along with them, in some cases along the way, the migrants lose them due to death. This again worsens the effects of displacement since the displaced lose their valued animals which are a form of wealth which enhance their livelihoods.

Additionally, as alluded to before, the effects of loss of access to common property are disproportionate with the poor being affected more than their rich counterparts (Cernea, 1995a; 1997a). Poor people depend more on common property resources, for instance, forested lands for their energy source. Apart from that, when people are forced to migrate, edible fruits that the people got from the forests will be gone, thus, exacerbating the food insecurity consequence. Additionally, in some areas, people fetch firewood for sale. Once displaced, access to these forests is disrupted and even the market is dislocated. All this adds up to reduced income among displaced individuals thereby cementing the argument by Cernea (2004) that loss of common property is tantamount to a loss of income.

In most cases, there is no compensation or restitution for these lost common resources although the loss impacts negatively on the welfare of the displaced. This means that compensation programmes that do not value the common properties are likely to underpay compensation. Again, in most cases, Zimbabwe included, the arguments will be based on ownership of the land where the government will claim land ownership and hence will not honour compensation for lost common property resources. The scenario in Zimbabwe is similar in Laos where legally land is owned by the state but the use of rights is based on informal village level institutions (Vandergeest, 2003). Vivoda, Owen and Kemp (2017b) state that many countries distinguish between land ownership and user rights to be able to use the power of eminent domain when the need arises. In Laos, just like everywhere else, when people are displaced into a place, conflicts arise over access to common resource and the result is resource degradation, resulting in the tragedy of the commons. Thus, loss of access to the common property is not only felt by the

displaced but by the receiving community as well since the demand for the resource increases in the host community.

Also in most cases, people residing in a particular area know how to get the best from the area through indigenous knowledge systems. A disturbance of this relationship will mean that the people will lose survival strategies that they used to get from their land and existing ecosystem. The perceived holy shrines will be left behind as people desert the area, with some of these shrines being where people would carry out their rainmaking ceremonies. Thus, people may believe that, by moving away from the shrines, their rain-fed agriculture is disrupted. Again, to get the long earned knowledge in the new area will take ages, if ever it will occur.

In conclusion, on the one hand, when households are displaced, they lose their access to common property, yet they may not be able to afford new avenues because their income would have fallen. At the same time, there is increased demand for common property resources in the host community which might lead to Hardin's (1968) tragedy of the commons since the management of such resources is difficult. Thus, there is a possibility that, say for common grazing land, herders will graze more animals in equilibrium than is efficient (Nicholson & Snyder, 2008). The same may apply in forest resources where an increased demand, say for firewood, because of inflows of IDPs may lead to the exhaustion of trees thereby leading to desertification. On the other hand, those displacees who did not have access to common resources may gain in the host community. In line with Pareto efficiency, the welfare of the IDPs who have lost access to common property in the pre-project area cannot be increased by accessing common property resources in host communities without affecting the welfare of the hosts themselves. Thus, hosts will get reduced access to common resources which may yield enmity between the two groups. Again, while those displacees who did not have access to common resources may gain in the host community, competition for the resource will soon be visible.

4) Loss of Access to Community Services

Also, when people are displaced, their access to community services such as schools and clinics is usually disturbed (Cernea, 1995a; 1997a). This has the effect of increasing morbidity because [s]erious decreases in health levels result from the outbreak of relocation-related parasitic and vector-borne diseases (malaria, schistosomiasis) and increased stress

and psychological traumas. Vulnerability to illness is increased, and unsafe water supply and waste systems tend to spread infectious diseases, diarrhoea, dysentery, etc (Cernea, 1995a, p. 252).

In short, the forced displacement may affect the health status of the resettlers thereby affecting their productivity as well.

Relocated individuals are subjected to environments that may promote the spread of diseases such as malaria (Robinson, 2003). In circumstances where clinics are rare, the diseases may cause increased death rates as noted by Cernea (1995a). Again because of the loss of amenities such as safe drinking water, the spread of diarrhoeal diseases is triggered or increased. In the advent of *Operation Murambatsvina* in Zimbabwe, many died because of lack of access to the social amenities (Tibaijuka; 2005). Even during the fast-track land reform programme, some people might have lost their relatives when the family had to move to a new place and the associated violence. With mining-induced displacement being associated with cohabiting of the displacee and displacer, pollution may again increase vulnerability to health problems. Again, the Tokwe-Mukosi displacements is a typical example (Mutangi and Mutari, 2014).

Again, upon displacement, children's education may be delayed or ended. In some instances, the children will have to travel long distances to get to a nearby school. The arguably new farmers in Zimbabwe are among examples of people facing such problems. Benjamin and Fancy (1998) argue that in the majority of cases, the displaced will receive no education or training at all. This implies that they will remain out of the job market for quite some time since they lack the basics of being employed. At the same time, no assistance comes their way to enable them to resume their studies.

When people are displaced it does not only come with negatives. The nearby community or those IDPs who are displaced *in situ* may benefit from the project which led to displacement. For example, in some areas roads are constructed and schools built. This improves the lives of the surrounding community that is not displaced. Furthermore, when some companies displace people, people may be placed in areas where the company will have built these social amenities. Thus, displacement might be a good thing because people may be placed in areas where these amenities exist or are closer to displacees than in the previous location. In the Central African

Region (CAR), Cernea and Schmidt-Soltau (2003) found that displacement for conservation purposes led people to be closer to formal health facilities thereby displacement becoming a risk reduction factor.

5) Homelessness

Homelessness is another risk associated with displacement (Cernea, 1995a; 1997a). In the context of Cernea (1999b; 2000) homelessness refers to the loss of housing and shelter. The displaced usually find themselves homeless in the process of or after displacement. Again Cernea, 2000, p. 3664) indicates that homelessness may refer to "... a worsening of housing standards...". This may imply that IDPs will be in overcrowded areas. Other IDPs may remain homeless even several years after the incident. In cases of civil strife, some people may find their homes burnt by government militia arguably for being accused of supporting those against the government. For instance, in Zimbabwe in the 1970s and the year, 2008 many people found themselves homeless after their homes were burnt due to war and politically motivated violence, respectively. Also, some people spent several months under no roof due to *Operation Murambatsvina* (Tibajuka, 2005). Their homes were pulled down under the name of making urban areas cleaner than before. Those who were fortunate enough sought refuge from relatives and friends in urban or rural areas, thus making use of social capital. Other IDPs resorted to constructing shacks because they lacked the money to build proper houses elsewhere. These shacks were later burnt, thus exacerbating the situation. This was also evident in Colombia, where Carrillo (2009) found that some of the displaced constructed shacks to shelter themselves but in 2007 fire burnt their shelter.

The extent of homelessness, however, differs from case to case. For some, it is not homelessness but over-crowdedness. A case of Chiadzwa and Zvishavane, both in Zimbabwe, may be applicable here. People were displaced but offered some rooms in which to put up. For Chiadzwa, the homes, however, were designed on a one size fits all approach. Even if one had built a seven-roomed or two-roomed house in their pre-displacement place of residence, they were allocated a three bed-roomed house (Madebwe, Madebwe & Mavusa, 2011). Along with this argument of homelessness in Zimbabwe, Oucho (2005) also indicated that Zimbabweans have immensely suffered this loss. Acharya (2009) noted that the displaced in Mexico, especially

those in Chiapas, have suffered homeless due to a 10-year conflict. However, Cernea (1999b) noted that for most IDPs, homelessness is a temporary phenomenon.

In summary, in displacement situations, homelessness is inevitable, though it may not be fully-fledged. Thus, overcrowdedness usually dominates. This overcrowdedness may also promote the spread of diseases thereby exacerbating the effects of loss of access to community services.

6) Social Disarticulation or Disintegration

Cernea (1997a) claims that displacement tears apart existing social fabrics as another risk. Community ties are dismantled during displacement, thus, social capital is lost. This increases the probability of impoverishment as people from whom someone would have got assistance are placed in a faraway place. This triggers continued potential impoverishment as someone will take longer to establish relationships that will work out especially if someone is placed in an environment surrounded by individuals who are not of his or her tribe or original community (Madebwe, Madebwe & Mavusa, 2011). Again, this emanates from the fact that the displaced and the host communities usually do not have common goals in life. Additionally, the host communities are normally not comfortable with the newcomers. Given all this, social disarticulation or social capital loss is inevitable. The claim by Cernea (1997a) that displacement leads to loss of social connectedness corroborates the argument by Coleman (1988) that whenever a family migrates, social capital is broken.

Cernea (1995a; 1997a) argues that this loss undermines livelihoods but is uncounted and unrecognised by planners, meaning that when planning resettlements, planners tend to ignore issues of social capital. He went on to say this causes enduring impoverishment and disempowerment. The reason may be because there will be resultant social capital loss due to loss of social ties. Along these lines, Megento (2013), in Ethiopia, found that 97% of the interviewed IDPs were connected because of funeral association of which after displacement this integration disappeared. The funeral associations were disintegrated because of the higher charges needed in the new location for one to be a member of the said association while the IDPs could not also remain in their previous associations because of distance.

From the perspective of social capital, social disarticulation results in the loss of productive assets. Thus, the use of social network resources is affected by displacement. Social capital, however, has no unique definition. One such definition is by Portes (1998, p. 6) who defines social capital as "... the ability of actors to secure benefits under membership in social networks or other social structures". In line with this, most communities in Zimbabwe rely on social networks for instance, in times of shortages, households lend to or borrow from others even small items like salt but they do not borrow from or lend to strangers or someone they are not connected to, in one way or another. In Zimbabwe, social capital is very useful such that even in the olden days' chiefs would operate community fields (*zunde*) meant to assist their subjects in times of need. Also, households would come together and assist each other in working in fields for no payments thereby making work easy, a practice termed *humwe or nhimbe* in the Shona language. Additionally, clans can fund the education of other members as well as help them get a job thereby again reducing search costs, as stated by Coleman (1988). Another example is the burial society model where households pull resources together to assist their bereaved members (Megento, 2013). In this example, non-members may not get assistance unless if loaned out. All these benefits from social networks can only be attained if social capital is in place because households will know that there is reciprocity in these activities (Coleman, 1988). Lack of social capital was noted to be the leading cause of unemployment among IDPs in Colombia (Lopez, Arredondo & Salcedo, 2011).

Schmid and Robison (1995) iterated that social capital is a substitute for and sometimes complements other productive assets. From this perspective, therefore, social capital can enhance productivity in the production process. For instance, through social networks, search costs are reduced whereby a producer may access information at less or no costs because of their connectedness. Through social capital, job seekers can easily and at lower costs, access job vacancies and are recruited while firms can easily find markets for their products. The reduction in search costs faced by firms combined with that faced by labourers reduces production lags, therefore, leading to increased output and economic growth. Also, Schmid and Robison (1995) indicate that bankers are reluctant to accept that they use social capital in loan approval even though these bankers do so. Therefore, one can perhaps deduce that IDPs who are connected to individuals with access to finance can get rehabilitated earlier than those without because those

IDPs with networks can easily access credit to finance their economic activities (Barbelet, 2017). It is also possible that forced migrants might choose to relocate to places where they have networks (Abdulai, 2016). For instance, during operation *Murambatsvina*, households sought refuge in relatives' homes.

Conclusively, by displacing households, productive human and natural capital is likely to be lost or social capital is disintegrated thereby stifling development or rehabilitation of the affected individuals and the society at large. For instance, cheap labour for farming, gained through working together as a community (*zunde, humwe/nhimbe*), is lost making households access labour at higher costs thereby affecting their production. Also, social capital lost due to displacement can reduce household resilience to shocks. In this context, resilience is defined as "... what enables people to survive, adapt and thrive in the face of shocks and chronic stresses" (Blakeley, 2016, p. 1). Therefore, displacement also affects indigenous knowledge systems which assist families to be resilient (Nyawo, 2016). However, as noted by Cernea (1997a, p. 1575), "[t]he social capital lost through social disarticulation remains unperceived and uncompensated by planners, and this real loss will reverberate long and detrimentally during subsequent periods". This may be taken to mean loss of social capital has effects on several generations besides the uprooted one.

7) Economic Marginalisation

Also, displacement leads people to be marginalised thereby losing economic power. According to Cernea (1995a; 1995c; 1999b), relative marginalisation starts well before actual displacement. This is because a designated area may face problems of new investment opportunities. In some instances, people have lost access to credit long before displacement because the land on which they resided had been designated for resettlement, yet Kvernrod (2004, p. 8) noted that credit is "... an oxygen infusion for a better life" among IDPs. The loss of credit is also exacerbated when people lose their trade links thereby adding to economic losses to the displaced (Cernea, 1995a; 1997a; 1997b). In essence, marginalisation leads to loss of income and even opportunities, such as those obtained from social capital. For instance, if one is marginalised they lose opportunities for getting employed because they are considered marginal. This exacerbates the living standards even of future generations who are likely to remain so. In Arda Transau, a sign of social

marginalisation is the name given to the area by the host community. The area has been nicknamed *kumaChaina* connoting distinction from those who were in the surroundings before the displaced were resettled in Arda Transau by Chinese owned companies hence the name *kumachaina*. Some IDPs have also been subjected to persecution and face hostility from host communities (Lopez, Arredondo & Salced, 2011). This, on its own, resembles social marginalisation.

As already alluded, other forms of marginalisation include denied access to credit as was done on C.A.R. refugees in Cameroon (Bargebelt, 2017). In Addis Ababa, Ethiopia, Megento (2013) also found that displacement dismantled most forms of assistance that households used to give to each other. It was also established that after displacement households could not borrow or lend. Again Majidi and Hennion (2014) found that women IDPs were isolated in Afghanistan. So, marginalisation is a common consequence among IDPs thereby affecting IDPs' potential rehabilitation. By being marginalised, someone's identity is also affected.

8) Food insecurity

Finally, food insecurity is almost certain when people are displaced (Cernea, 1995a; 1997a). Food insecurity according to Cernea (1995a; p. 252) is defined as "... calorie protein intake levels below the minimum necessary for normal growth and work". What this definition implies is that food security is measured by the amount of food consumed and the energy derived from such food. Kumar (1989), however, noted that measuring food consumption using calorie intake is the most direct indicator of food consumption but is very expensive and time-consuming. The approach is expensive because the researcher needs to visit study participants several times, weighing the food types taken and also taking cognisance of amounts left after the meal. Seasonal considerations also need to be taken aboard in calorie intake studies. Kumar (1989), therefore, noted that resources are rarely available to allow for such a method to be used for large samples. Mooney, Knox and Schacht (2011) share the same sentiments that calorie intake is difficult to measure and therefore use as a measure of food security. Mooney, Knox and Schacht (2011) noted that this variable differs across gender, age and level of physical activity and it varies from year to year.

Therefore, in line with Kumar's (1989) food availability approach, this thesis defines food security as the availability and physical access to food by every member of the household. Closely related to food security, as the term is used in the thesis, is food self-sufficiency which suggests that a household must produce all the food it needs (Dzanku & Sarpong, 2011). Food security is, however, broader in context in that it implies that one must have availability and physical access to food irrespective of whether the food is produced by the household or obtained through other means such as buying. However, Joshi and Maharjan (2007) and Dzanku and Sarpong (2011) noted that food self-sufficiency is important in attaining food security, especially where transaction costs may be too high to prohibit the workings of the commodities market. Therefore, displacement affects food self-sufficiency and even local arrangements for supplying food thereby leading to food insecurity among the displaced (Cernea, 2004). Cernea (1995a; 1997a; 1997b) argued that once in a new environment, the soil requirements for agricultural purposes are not easy to establish and the appropriate methods for tilling the land are not readily available to displacees. These two combined tend to increase the food insecurity that displacees will face. Normally, for the first two or so agricultural seasons, IDPs are faced with acute food shortages possibly because of the knowledge gap between soil requirements and IDPs' risk aversion for engaging in new activities. Carrillo (2009) established that, due to displacement, almost half of those displaced in Colombia ate fewer than three meals a day, therefore, households were considered food insecure. Also, the food aid that was availed targeted certain groups such as expecting mothers and children. Additionally, thousands of displaced people, especially women and children suffered from food shortages in Mexico (Acharya, 2009).

Cagoco-Guiam (2013) argued that displacees may be placed further away from their farms, thus, increasing the danger of food insecurity. Also the animals they could have used to sustain themselves may have been lost due to displacement. To exacerbate the situation, food assistance meant for displacees may not reach the intended beneficiaries, due to poor targeting by the donors or the food may be seized by authorities such as local governments. Additionally, displacees were found to eat fewer meals as a means of minimising asset sales.

After the farm invasions in 2000, Zimbabwe ceased to be the breadbasket of Southern Africa and became the bread 'beggar' in the same regional block. The food insecurity risk among IDPs in Zimbabwe has been identified by Oucho (2005). Among FTLRP IDPs, Sachikonye (2003b)

showed that households became food insecure after displacement. Again, Arda Transau residents hinted on the fact they are being denied food support from the donor community by the local authorities as was found by Cagoco-Guiam (2013) in the Philippines. This may exacerbate the displaceds' food insecurity situation.

Food security can be noted to be a function of several factors, among them access to productive agricultural land. Access to agricultural land can improve households' access to food through self-sufficiency. In Africa, most households are subsistent farmers implying that they are inclined to food self-sufficiency than food security (Dzanku & Sarpong, 2011). Therefore, most households in Africa have an objective of maximising household food output subject to available resources such as land and household labour. Only if returns from family farming are lower relative to non-farm activities will households engage in other activities that enhance food security besides agriculture. As a conclusion, at the national or community level, food security is important while at household level food self-sufficiency may override food security. Again, displacing households leads to land losses which affect IDPs' food self-sufficiency and food security. Food insecurity among IDPs may be a result of either food self-insufficiency or loss of land (or both) that lead(s) to inability to engage in other activities that may result in food security. Therefore food self-sufficiency may feed into food security.

As a conclusion, of the above eight risks or consequences, the study considered joblessness, landlessness, food insecurity, social disarticulation, marginalisation and loss of access to common property as major economic consequences since losses in these variables combined are most likely to lead to loss of income, a major economic variable among IDPs. Certain considerations were also given before leaving out other consequences identified by the IRR model in this analysis, for instance, Cernea (1997a) noted that homelessness may be a temporary thing. Again, on homelessness, IDPs in Arda Transau may not be homeless but overcrowded since they have been allocated houses, potentially reducing the extent of the effect of displacement on this variable.

2.2.4 Other Consequences of Displacement

Since the IRR model by Cernea (1995a; 1997a) was found not to capture all consequences of displacement (Muggah, 2000), several other consequences were identified mostly from the

empirical literature. Thus, Cernea (1997a) also acknowledged that the eight consequences of impoverishment risks he identified are not the only ones. This gave room for the other risks emanating mostly from empirical literature to be explained again in this section.

In a study on the economic consequences of forced displacement in Northern Uganda, Fiala (2012) established using panel data that households who were displaced by conflict experienced between 28% and 35% consumption decrease as compared to non-displaced ones. The study also established that even after returning, the displaced Northern Uganda households lagged behind their non-displaced counterparts even though they had recovered somehow. The results by Fiala (2012) seem to confirm Cernea's (1995a) resettlers' income recovery curve which propounds that when people get displaced, their income suddenly drops and flattens for a certain period. If there is replacement of existing assets alone, the displaced will not catch up with the non-displaced. This failure to catch up with the non-displaced households can be because while the displaced lost some assets during displacement which led to a sudden drop in income; their counterparts were busy accumulating some other assets. Again, Ibanez and Moya (2009) found that recuperating assets or accumulating new ones among IDPs is rare with only 25% of the displaced in Colombia being able to recover the original asset base. Therefore, this again seems to confirm the income recovery curve because, without any strong intervention, these IDPs will be lagging behind their counterparts.

Benjamin and Fancy (1998) and Hoshour and Kalafut (2007) noted that there is a disproportionate impact of displacement on the population. Mostly, the poor, the elderly, women and children suffer most when displaced. In some instances, due to displacement, children are left under the care of one parent, usually the mother, because the father may have fled the conflict. The most likely reason for this disproportionate burden is that women are less likely to be threatened when violence looms. However, the memories of seeing a family member experiencing such treatments, such as being killed, is very traumatic thereby likely to affect these women more since they are most likely to be spectators. Therefore, the direct and indirect effects of conflicts may be considered to be gendered. Again, with the current HIV/AIDS pandemic, elderly grandparents are sometimes left to take care of their grandchildren. The impact of displacement will be severe if the elderly are under such a burden. Therefore, women, especially

the elderly and children are sometimes the most vulnerable group in society when it comes to displacement consequences.

On gendered differential effects of displacement, Benjamin and Fancy (1998) argue that displacement affects women in several ways such as trauma associated with loss of family members, separation of family and gender violence or failure to inherit land and property. The authors argued that women were less likely to find jobs in urban centres because the environment in which these women were now in was unfamiliar so they feared for their lives and also because they did not have the necessary literacy level. In some cases, they did not even have someone to leave their children with. This then means that these women could not rehabilitate themselves once displaced.

In a study of forced displacement in Nuanetsi Ranch in Zimbabwe, Mutopo (2011), using ethnography, established that the effects of internal displacement due to bio-fuel production among men and women in Zimbabwe are different. The conclusions on gendered differential effects are similar to those by Benjamin and Fancy (1998) and Hoshour and Kalafut (2007). Mutopo's conclusion was arrived at, probably, because women were found to have difficulties in accessing and using the land. The Nuanetsi residents rely heavily on rain-fed agriculture with the majority of women dominating in groundnut and *Bambara* nut growing while men dominate in cotton farming. In the study by Mutopo (2011), the other most likely reason for the disproportionate impact is the fact that the majority of the men, especially young-men, migrate to South Africa. Thus, while women and children were being displaced, the husbands were in South Africa. This means that the impacts will be different because the women will have hands-on experience while the men will be told about it. On bio-fuel projects, Agleby (2019) also established that these projects had negative consequences in Ghana. Conclusively, although argued to yield aggregate positive results, bio-fuel projects equally have negative consequences such as landlessness.

Arguably, population displacement may also lead to climate change. Hoshour and Kalafut (2007) argue that large projects such as coal mining emit greenhouse gases which lead to global warming that again leads to climate variation. When these projects are undertaken, tree felling is imminent leading to desertification which will again cause temperatures to go up and less rainfall

will be received. For the case at hand, although Chiadzwa can be considered semi-arid, the few trees there had to be removed to pave way for mining which could be argued to accelerate the desertification process.

The consequences of displacement may not only be experienced by the displaced generation. Even after several generations, people may still feel the impact of displacement since it has long term negative effects (Cernea, 1997a; Namutebi, 2017). The Tonga people still feel aggrieved because their ancestors were dispossessed and displaced when the giant Kariba dam was constructed. Additionally, as predicted by Cernea (1997a), those who attach value to ancestors' graves and shrines cannot be spared, such as the people from Chiadzwa, where 80% miss ancestors' graves (Madebwe, Madebwe & Mavusa, 2011). When a misfortune happens, the displaced may attribute it to the desertion of the shrines due to displacement. All in all, several generations may suffer the consequences of displacement.

Displacement may also lead to health problems, as also predicted by Cernea (1997a), as a result, affecting society's productivity. From this avenue, ill-persons have been noted not to be as productive as the healthier ones, sometimes because of absenteeism from work. Just like the gendered differential effects of displacement, health problems may also be differential with women and children being most affected. It was revealed by Doliashvili and Buckley (2008) that displacement was associated with pelvic inflammatory disease in Georgia. So the sexual reproductive health of women may be affected when they are displaced. The most likely explanation for the findings by Doliashvili and Buckley (2008) is that when displaced, social networks are affected which then affects people's awareness of reproductive health issues. In line with this, Kawachi, Kennedy, Lochner and Prothrow-Stith (1997) found that lack of social capital is related to rates of death and coronary heart diseases. If the loss of social networks is coupled with poor access to health facilities, which usually is the case when displacement occurs (Cernea, 1997a), the situation is worsened. In as much as a sick employee is not as productive as a healthy one, if displacement leads to illnesses in line with the predictions by Cernea (1997a) and Doliashvili and Buckley (2008) then productivity is reduced thereby culminating in slow economic growth if a significant number of people are forcibly displaced. On a local scale, the displaced may again be vulnerable to food self-insufficiency, hence food insecurity because of

reduced manpower since the sick person may not be able to work as much as they could do had they not been sick.

Not only will displacement affect reproductive health, but it may also affect mental health. The trauma associated with activities of displacement may cause one to lose his/her mind and, hence be mentally disturbed. It is a pity to see one's loved one being tortured or being killed, hence it affects the individual psychologically. Therefore, Getanda, Papadopoulos and Evans (2015) revealed that after displacement, IDPs reported poor mental health and that those IDPs without access to government support were at high risk of mental health problems. Therefore, support may be considered a mediating variable for mental health.

The other possible consequence of internal displacement is women trafficking and sexual exploitation. Women may be forced into unwarranted sexual activities once displaced which may result in unwanted pregnancies that again give an economic burden to the mothers. Acharya (2009) noted an increase in sexual exploitation in Mexico as a result of displacement which was coupled with women trafficking. Oucho (2005) noted that in Angola and DRC, female abduction and raping was rampant in what he called 'complex emergencies', which is a form of disaster-induced displacement. Mootz, Stabb, and Mollen (2017) also found the prevalence of sexual violence in Uganda.

Due to displacement, domestic violence, sexual abuse and separations have also resulted. Traditionally, in Zimbabwe and other countries, family quarrels were quelled down by some family members, for instance, aunties and uncles. Once displaced, as already alluded to before, social disarticulation results or social capital is lost. This will increase the chances of family domestic violence with domestic violence leading to poverty (Mootz, Stabb, & Mollen, 2017). Therefore, family break-ups may increase since those who would have helped to keep the family intact may be placed in a faraway place or even killed during conflicts such as wars.

Despite some negative consequences of mining-induced displacement, mining can also have positive effects on society. It creates employment for the less educated especially small scale mining which requires less technology. This will positively impact on both the personal living conditions and the GNP of a country. To this effect, Hilson (2002) noted that a conference held in Harare, Zimbabwe, in February 1993 concluded that small-scale mining benefits outweigh

their negative effects. Therefore, in as much as countries advocate for large companies which bring in foreign direct investment, the conference noted the opposite is more beneficial where small scale miners lead to more gains than losses. However, small scale miners like artisanal miners usually lead to land degradation.

Among other consequences of internal displacement identified are spread of contagious diseases, increased crime rates and poor healthcare (Malinowski, 2016). It is unequivocal that where several individuals are concentrated in a small piece of land, diseases' spread is likely high. In such instances, disease spread is prominent in IDP and refugee camps where migrants will be concentrated in one place. This corroborates the argument on access to community services by Cernea (1995a; 1997a).

2.2.5 Conclusions on Economic Consequences

Many consequences of internal displacement have been identified in literature with landlessness, joblessness, social disarticulation, marginalisation and food insecurity dominating the list. One can also note from the literature that mining-induced displacement, as a form of development-induced displacement, is still under-researched, the world over. Therefore, this thesis explored the economic consequences of development-induced displacement, with particular reference to mining-induced displacement among internal displacees in Arda Transau, Zimbabwe. With Zimbabwe being a displacement economy (Bracking, 2014), this thesis is rightly placed.

The literature reviewed has also indicated that economists, in general, and development economists in particular, have mostly been ignoring the economics of resettlement despite the involvement by other disciplines such as anthropology and sociology. Therefore, the thesis tried to come in as a response to the calls by Cernea (1995a; 1999), Dwivedi (2002) and Caspary (2007), among others. Also, existing literature has mostly approached the variables used in the thesis from a different perspective, sociological and anthropological perspectives in most cases, as compared to the current study which is economics-based. For instance, landlessness was mostly used to refer to the loss of land in terms of size, in most of the previous studies, at the expense of productivity. From this view, therefore, households may have lost land in terms of size but may have gained a small but productive land thereby boosting food security. Again, from the agricultural economics view that there is an inverse relationship between land size and

productivity (Sen, 1962), farm owners may become more productive when they are given small landholdings thereby again boosting their food security. All these views have not been extensively explored by previous literature.

Again, unlike Cernea (1995a; 1997a), who focussed on equity, human rights and social justice in the IRR model (Vivoda, Owen & Kemp, 2017a), the current study is economics-based. Thus, the thesis contributes to the existing literature by adding an economics flavour to the IRR model. Therefore, the thesis can be considered to be one of its kind.

With displacement consequences having been outlined, it is plausible to highlight how they link with economic activities which are discussed in the next section. Displacement has the potential to disrupt economic activities among the IDPs. With these disruptions, livelihoods will be at stake thereby requiring IDPs to cope. Such coping strategies come in various ways such as *ex-ante versus ex-post* and state-level *versus* household level. Along this line of thought, De Vriese (2006) views households' economic activities as dependent on other variables in the household triangle made up of capabilities, assets and activities which is analogous to the view held by Chambers and Conway (1991). Within the context of the thesis then, displacement affects household capabilities and assets thereby affecting economic activities because De Vriese (2006, p. 1) said: "[h]ousehold members use their capabilities and their assets to carry out activities ...". Therefore, the next section discusses in detail these coping strategies and their determinants among IDPs. The section reveals, among other conclusions, that studies on determinants of the choice of coping strategies are still scarce.

2.3 Economic Activities and Coping Strategies among Displacees

Having discussed the consequences of displacement in detail, it can be argued that after being displaced, the affected households try to cope with the effects in various ways ranging from assets disposal to reducing current consumption. Thus, due to displacement, people are forced to reorganise their activities as a way of coping with the situation bedevilling them. Reorganising economic activities involves choice making hence this study also considers choice theory. In this section of the study, the literature reviewed is therefore based on the theory of choice given a life-changing event (displacement). In this respect, much of the literature reviewed is based on the choice of coping strategies after displacement with opportunity-led diversification also

briefly reviewed. Given the choices under such situations, risk management strategies have to be taken into consideration. Therefore, a brief overview of risk management is also done. Overall, an interdisciplinary approach is used in this literature review.

As a roadmap, this section firstly presents definitions and theoretical concepts on livelihoods and coping strategies. Under theoretical concepts, the focus will be made on rational choice theory, bounded rationality theory and finally coping strategies. Additionally, the empirical literature on coping strategies will be presented followed by a conclusion section.

2.3.1 Livelihood and Coping Strategies Defined

Coping is defined by Lazarus and Folkman (1984, p.141) as "... constantly changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person". Of importance in this definition is that coping involves the use of effort to manage the effects of the taxing demands. Thus, Carpenter (1992, p.4) viewed coping as "... what one does ...". However, Carpenter (1992) and Haour-Knipe (2001) agree that the definition of coping is not unanimously agreed upon. Also, the definition given by Lazarus and Folkman (1984) has been taken by Haour-Knipe (2001) to mean coping strategies.

Additionally, "... coping strategies are fallback mechanisms ... when habitual means of meeting needs are disrupted" (Rashid, Langworthy & Aradhyula, 2006, p. 5). In line with this Heitzmann, Canagarajah and Siegel (2002) note that coping is reactionary because coping strategies are used when a risk has already been realised. This view concurs well with Carpenter (1992). Rashid *et al.* (2006) indicate that once faced with shocks households, first of all, minimise risk and manage losses, followed by divestment which is the gradual disposal of assets. The definition by Rashid *et al.* (*ibid*) seems to be focused on physical needs but shocks do not only affect physical needs. Instances of critical illnesses of relatives are examples of shocks that require coping without necessarily referring to physical needs but may also require moral support. However, Davies (1993) defines coping strategies as follows: "... coping strategies are often used as a catch-all term to describe everything that rural producers do over and above primary productive activities" (Davies, 1993, p.61). Within the context of this definition, it means that once an individual does an activity beyond the usual activities to sustain themselves, then the activity is a coping

strategy. Therefore, Davies (*ibid*) acknowledges that not all activities can be considered as coping strategies. Davies (1993) and Rashid, Langworthy and Aradhyula (2006) seem not to agree on the definition of a coping strategy. Rashid, Langworthy and Aradhyula (2006) consider activities done in response to a shock that affects usual livelihood activities as coping strategies while Davies (1993) views a coping strategy as any other activity above normal activities irrespective of whether it is a response to a shock or not. Therefore, given these definitions and the gist of this study, the definition by Rashid, Langworthy and Aradhyula (2006) is taken to be the working definition in this study.

Additionally, as indicated by De Vriese (2006), the widely used and accepted definition of livelihood is by Chambers and Conway (1991). Chambers and Conway (1991, p.6) assert that

... a livelihood comprises the capabilities, assets (stores, resources, claims, and access) and activities required for a means of living: a livelihood is sustainable which can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation; and which contributes net benefits to other livelihoods at the local and global levels and in the long and short term.

From this definition, one can note that a livelihood strategy is broader than a coping strategy. In this study, therefore, if households are found to be doing what they used to do before displacement or there is no difference in frequencies of usage of that strategy, it is considered a livelihood strategy. Contrastingly, if there is the use of new strategies to survive or frequency of use of certain strategies increase, then that will be considered a coping strategy as also viewed by Rashid *et al.* (2006). However, in line with Davies (1993), all behaviour can become a coping strategy, especially in poverty-stricken rural households. In line with this, Chambers and Conway (1991, p.5) defined livelihood as "[a] livelihood in its simplest sense is a means of gaining a living". From the two definitions by Chambers and Conway (1991) and Davies (1993), another seemingly simple definition of a livelihood activity can be derived which define livelihood as all behaviour meant to gain a living under certain circumstances with coping strategies being viewed as reactionary survival means to the changing circumstances. Having defined coping strategies, the next section outlines the theoretical concepts of coping strategies.

2.3.2 Theoretical Concepts

A vast literature exists on coping strategies, therefore there is need to delimit the amount of literature to be reviewed. In the context of this study, the literature reviewed includes the one on choice theory, coping strategies and livelihood activities. It is assumed in this study that once displaced, individuals still have to make a living, to meet their basic needs as suggested by Maslow (1943) and Doyal and Gough (1991) hence they have to devise ways for that to occur. Based on that assumption, households have to choose what to do to make a living. These choices of economic activities are dependent on a combination of various individual-specific factors and non-individual factors. Given that the IDPs in Arda Transau are likely to stay there forever their choice of economic activities are likely to be made in the context of sustainability. Therefore, sustainable livelihood activities among IDPs literature is also reviewed. Lastly, coping strategies in general and economic ones, in particular, are also considered with a bias towards those chosen by IDPs. This approach enables an in-depth understanding of coping strategies under stressful life events.

Two main definitions of livelihood exist, one by Chambers and Conway (1991, p.6), as already defined on page 87 of this thesis. One of the major aspects in the definition by Chambers and Conway (1991) is capabilities. According to Nussbaum (2003) and Sen (2008) capabilities refer to what people can do or be. Capabilities are alternatively defined by De Vriese (2006, p. 1) as "... the combined knowledge, skills, state of health and ability to labour or command the labour of a household". In other contexts, capabilities have been defined as real opportunities (Schokkaert, 2009). Therefore, by displacing people and decapitalising them, the displacer reduces the displacees' capabilities as espoused by changes in livelihood activities. The other definition of livelihoods is, on the one hand, by Jacobsen (2002) who indicated that

[L]ivelihoods refer to the means used to maintain and sustain life. Means connotes the resources, including household assets, capital, social institutions, and networks ... and the strategies available to people through their local and transnational communities (Jacobsen, 2002, p.98).

On the other hand, coping strategies are "... next best' efforts to make do in a difficult situation with the hope that the household can return to normal activities and their normal livelihoods strategy" (de Satge *et al.*, 2002, p. 159). The return to normalcy may, however, be impossible in

displacement situations unless return migration occurs. However, even where return migration has occurred, returnees may still lag behind those who have never been displaced, possibly because of the loss of assets IDPs incurred. Another way of defining coping strategies is “... coping strategies are fallback mechanisms for when habitual means of meeting needs are disrupted” (Rashid, Langworthy & Aradhyula, 2006, p. 5). Thus, from the definitions given so far, it can be noted that livelihoods are broader than coping activities hence this study considers livelihoods literature as well in the sections to follow.

Based on the need to survive, just like any other household, IDP households have to make choices as to which activities will best suit their needs given the prevailing circumstances and the environment in which they find themselves. This activity may or may not be utility maximising but be used as a survival technique. The following section provides an overview of choice theory which is divided into rational and bounded rationality choice. An exposition of choice theory has not been done here because of the nature of the study but a brief overview made the necessary understandings for its applicability to the choice of economic activities.

I. Overview of Choice Theory

When displaced, a rational household faces a choice problem of what economic activity to engage in as a coping strategy. According to De Vriese (2006) households “... use their capabilities and assets to carry out activities ...”. Therefore, given that displacement affects capabilities and assets, its effect on economic activities cannot be ruled out. Within the context of rationality, individuals are assumed to act purposefully, given available choices, to attain optimal results (Lichbach, 2003). Of note is that rationality demands reasoned scrutiny given that the individual will be faced with an array of options (Sen, 2002). However, that rational choice restricts the ability to do things (choose) is exacerbated after displacement because the array of choices may be reduced, or may be believed to have been reduced. Therefore, the rational choice theory may be useful in studying preference choice formation/s, thus in this study, it may shed light on how IDPs make choices of economic activities to undertake.

Equally, important to internal displacement studies is the decision on whether to relocate to the designated site or not. Since everyone is assumed to be rational (Arrow, 1963), rationality is equally assumed to prevail if an individual is forced to migrate. Other things being equal, the forced migrant might as well opt to relocate elsewhere other than the designated area. Therefore,

the rational choice theory is assumed to have been at work for one to be found in Arda Transau. Consequently, the rational choice theory may be applicable in resettlement studies especially as far as decisions of economic activities are concerned.

The context in which rational choice theory is applied in internal displacement is from the behavioural ecological perspective. In this perspective, Vlaev (2018, p. 3) noted that "... concepts from evolutionary biology predict how an animal should respond to risk if it is maximising its fitness". Within that context, therefore, a person or household is expected to take certain behaviours (economic activity in this study) when they face risk, displacement in the context of the thesis, to maximise utility under the prevailing circumstances. The following subsections expound on the choice theory focusing on two of the various components of the theory, *viz*: rational choice theory and bounded rationality theory.

i. Rational Choice Theory (RCT)

Rubinstein (2006) indicates that in whatever circumstance economic agents find themselves in, two questions must be answered and these questions are "[w]hat is desirable and what is feasible?" (Rubinstein, 2006, p. xi). The solution to the two-choice problem questions is one where the economic agent "chooses the most desirable from among the feasible alternatives" (Rubinstein, 2006, p. xi). In line with this, Gilboa (2010, p. 4) noted that "... the feasibility of an option affects its desirability". Therefore, rational choice theory (RCT) is aimed at understanding and modelling social, economic and individual behaviours (Ogu, 2013) which are feasible and desirable. Ogu (2013) also notes that general choice theory is sometimes taken to mean rational choice theory. In short, referring to the definition of rational choice theory, Lovett (2006, p. 240) claims that "[t]he simplest and best answer defines RCT as an approach to the study of social phenomena characterized by a small bundle of core methodological assumptions". However, Lindenberg (2001) and Hodgson (2012) assert that rationality has several meanings to different people which, according to Hodgson (2012), are the sources of confusion to many people.

Building on the previous statements, one could be right to say rational choice theory states that all human actions are rational, thus human behaviour is driven by rationality, an assumption akin to the one made by Arrow (1963). To Arrow (1948) and Sen (1977) rationality is nothing more than internal consistency whose rationale is based on a person's real preferences as depicted by

their actual action. Also, Hodgson (2012 pp. 94) notes that "[o]ne popular notion of rationality is *thoughtful deliberation*" and this is similar to "*acting for reasons*", thus Rubinstein (2006 p.26) iterates that "... the choice is an outcome of rational deliberation". Therefore, Lichbach (2003), Rubinstein (2006) and Ritzer (2011) agree that rational agents act purposefully to attain a desirable outcome. One can then say, by employing thoughtful deliberations to act for reasons, individuals end up behaving rationally. From the statements by Rubinstein (2006) and Hodgson (2012) one notes that whatever decision one makes, the rational choice theory assumes that it had been deliberately thought out well and reasons, for and against, have been given and weighed out thereby assuming that a cost-benefit analysis has been done. The rational choice theory assumes that individuals, given choices, are rational in that they make choices that maximise their utility based on cost-benefit analysis. This line of thinking is shared by Bias, Smith and Jansson (n.d) when they state that rational individuals make decisions today to maximise current and future utility. This implies the use of intertemporal decisions. In short, rational choice involves making feasible and desirable choices through thoughtful deliberations for a given time frame with the timeframe even being of undefined duration.

Sato (2013 p.1) indicates that "[t]he purpose of rational choice theory is to explain social phenomena by assuming rational choice at the actor's level" and since the result of any economic activity is consumption, then any economic activity is aimed at maximising utility hence choices have to be made with the final intention of utility maximisation in mind. Therefore, in the case of IDPs, the choice of economic activities and or coping strategies, as social phenomena, hinges on utility maximisation based on doing the best under the circumstances the IDPs find themselves after displacement. These circumstances then define the feasibility of activities. However, rational choice theory assumes that individuals are fully informed about their decisions which may not hold for IDPs since they may be new in the area such that perhaps information about, say, soil requirements and suitable crops to produce may not be readily available fully. The information about these, especially among poor IDPs, is usually acquired through the indigenous knowledge systems which may have been rendered inapplicable due to relocation. With that limited information, however, the IDPs still have to make decisions such as: what crops to grow, how many animals to keep and how much to consume under the prevailing conditions?

Like many theories in economics and any other discipline, the rational choice theory has key assumptions which form its foundation. These assumptions include the following as outlined in Ogu (2013) and Wittek (2013), among other authors.

a) Individualism

Rational choice assumes that individuals are the ones involved in decision-making to maximise utility. These individuals have to make rational decisions based on full information they are assumed to have (Wittek, 2013). By individuals, it is meant individual persons, households and or institutions. In this study, the individual refers to the household which collectively chooses the economic activities to undertake to maximise household utility.

b) Optimality

In rational choice theory, individuals are assumed to make optimal decisions. Thus, optimisation results in the best choice being made which is based on individual preferences. In this regard, therefore, IDPs' optimal decisions are based on their preferred economic activity such as which crop to produce or animals to rear. From the coping perspective again, individual households will decide which strategy to use such as the sale of assets (for instance livestock), reducing consumption and reverting to religion. In the context of rational choice, optimality may also be viewed as feasibility. Under feasibility, it is meant what actions are possible in the current circumstances to yield the best-intended results.

c) Structures

This assumption claims that rational choice depends on the available structures and norms. Thus, circumstances surrounding an area dictate the choices available to individual actors. For instance, in pre-displacement location (Chiadzwa) households may have had chances to sell wild fruits, sell baskets and grow vegetables along Odzi River for sale while in Arda Transau, the circumstances are different, and hence the IDPs have to make choices limited by available alternatives. For instance, the IDPs may now face difficulties in disposing of animals since the number of livestock has reduced after displacement. Perhaps it may also be so because the established market that was there in Chiadzwa has not yet been established in Arda Transau. Also along this line of thought, IDPs may be restricted on varieties of crops to grow because of

the small piece of land they now have. Also, structures like roads determine accessibility to the market and therefore products to offer on the market. Therefore, existing structures dictate the optimal choices to be made.

d) Self-regarding Interest

Self-regarding interest assumption argues that individuals are mostly concerned about themselves. Coleman (1986) noted that this assumption claims that individuals are purposeful and goal-directed. Although Sen (1977) claims that the self-interest assumption is due to Edgeworth (1881), the assumption appears earlier in Adam Smith (1776) where Smith argued that individual behaviour, concerning the clergy, is determined by self-interest. Sen (1977) might, however, have been right to declare that this self-interest principle has been persistent in economic models because, although Sen said this more than four decades ago, the same could still be true since when individuals make decisions, their first intention is usually to satisfy themselves. However, in the process of satisfying themselves, self-interest results in individuals making decisions that may benefit others, as espoused by the invisible hand by Adam Smith. In Arda Transau, therefore, an individual household's coping strategy depends on the need to meet the needs of the household first without considering the whole community. However, the experience from the use of the strategy, that is its success or failure, may be shared with the community which may or may not pursue it depending on whether the first user succeeded or failed to obtain the expected results.

e) Rationality

Though this may be closer to self-regarding interest, rationality assumption implies comparing alternatives to get the best that benefit the individual under consideration. Ogu (2013) argues that this is the most predominant assumption. However, Lindenberg (2001, p.635) argues that “[r]ationality means many different things to many different people”. Lindenberg (*ibid*) says some people view rationally as indicating individuals' ability to reason while others take it to mean actions undertaken are a result of reasoned calculations. Therefore, a plethora of meanings can be assigned to the rationality assumption of RCT.

One version of rationality is the Milton Friedman (1953) "as if" argument. Applied to rational choice, this argument may mean that rational behaviour indicates that the actions of individuals are as if these individuals had made calculations for them to make a conclusion (Lehtinen, 2007). For instance, if an individual IDP in this study chooses to grow more cash crops compared to food crops, it is taken as if they had made all the necessary computations for them to conclude that cash crops will maximise utility as compared to food crops. In line with the Friedman "as if" argument, Simon (1955) noted that a rational man is assumed to have a system by which he calculates the best option to take which attains the highest point on the indifference curve map. However, given limitations associated with the assumption and complexities involved, the rational man might not act rationally. These complexities gave rise to Simon's (1955) bounded rationality theory which is discussed in the next section.

ii. Bounded Rationality Theory

Bounded rationality arose due to discontent with the RCT. According to Barros (2010) and Burns and Roszkowska (2016), the concept of bounded rationality was first proclaimed in economics by Simon with Grune-Yanoff (2007) also acknowledging that the bounded rationality concept first appeared in print in Simon's Model of Man. Simon (1955) brought this concept as a critique of the full rationality concept that assumes that humans can solve all mathematical problems they are subjected to. In this regard, Selten (1999, p.3) indicates that "[f]ull rationality requires unlimited cognitive capabilities". These sentiments are equally shared by Burns and Roszkowska (2016) who indicated that the RCT economic agent "... is supposed to have unlimited calculating capabilities enabling her to deal with all the information that complete knowledge implies and process that information in mathematically consistent and effective ways to make decisions" (Burns & Roszkowska, 2016, p.198). However humans, being human, as they are, cannot have unlimited capabilities unless if they are now at par with God the Creator. Thus, Simon is argued to have used the "... term to sometimes refer to limited computational and deliberative capacity" (Hodgson, 2012, p. 94) and hence taken into account "...the cognitive, knowledge, and computational limitations of decision-makers" (Burns & Roszkowska, 2016, p. 200). This could be taken as true since Simon (1955, p. 101) says

[b]ecause of the psychological limits of the organism (particularly concerning computational and predictive ability), actual human rationality-striving can at best be an extremely crude and simplified approximation to the kind of global rationality that is implied, for example, by game-theoretical models.

Simon (*ibid*) also acknowledged that when dealing with rationality issues cognisance must be taken on the properties of the choosing organism and the environment of choice.

The line of thought taken by Simon (1955), Hodgson (2012) and Burns and Roszkowska (2016) also brings about the fact that even the choices availed to individuals in each situation are limited and, hence computations available are also limited, therefore, making life somehow easy for the rational choice theory actor. In short, Ostrom (1998, p.9) highlights that "[b]ecause individuals are boundedly rational, they do not calculate a complete set of strategies for every situation they face". Consequently, bounded rationality theory seems to be a simplified version of the rational choice theory in that it acknowledges that individuals do not have unlimited choices and calculation capabilities. This seems more realistic in real-life situations and seems consistent with the economic discipline that assumes that choices are limited.

The view of boundedly rational behaviour that this study takes is from Selten (1999) who borrows from Simon and concludes that even though rational behaviour cannot be precisely defined, "[i]t refers to rational principles underlying non-optimising adaptive behaviour of real people" (Selten, 1999, p. 3). Selten went on to indicate that bounded rationality is not the same as irrationality. Thus, from this definition, IDPs may not need to optimise but to adopt some ways and means that enable them to survive. Alternatively, it may mean doing livelihood activities that will yield a certain level of utility. For this utility level to be attained there is, therefore, the need for the choices made to be desirable and feasible.

2.3.2.1 Criticisms of the Choice theory

A plethora of criticisms has been posted on the theory of rational choice. One such criticism taken by one group of critics is that the theory does not necessarily ask the origin of the preferences taken (Ritzer, 2011; Sato, 2013). For instance, preferring cash crop production over food crop production needs to be assessed from the viewpoint of knowing the origin of these

preferences. Wildavsky (1992) notes that culture, for instance, must be taken into consideration. In the context of displacement, cultures that are rich in social capital are likely to rely more on social capital even after displacement and therefore, their economic activities may equally depend on social connections. From the perspective of this study, even though culture may play a great deal in determining coping strategies after displacement, it was not considered as a variable because the IDPs have shared culture from time immemorial in Chiadzwa. To conclude, Lovett (2006) argues that the debate concerning rational choice theory usually emanates from a misunderstanding of the role that rational choice plays in social phenomena explanations.

Borrowing from the concept of diminishing marginal utility, one of the possible critics of rational choice is that, if at any given point, a person is faced with choices but more options are not necessarily better than less. Therefore, one cannot continue to get the best from having many choices instead it is better to have few choices and maximise utility based on the limited choices availed unless the point of satiation is not yet reached.

Additionally, the rational choice theory assumes full information which may not hold. In the case where individuals do not have full information, the theory fails because the preferences may be incomplete (Burns & Roszkowska, 2016). Again, rational behaviour is limited because of the cost that must be incurred to obtain the information, thus cost becomes a restriction in the economic actor's decisions. Also, Lindenberg (2001) and Ritzer (2011) note that scarcity of resources makes choices to become restricted which again brings in opportunity costs.

Burns and Roszkowska (2016) argue that rational choice has a plethora of criticisms which if they were to be exhausted will result in a book. For instance, Sen (1977, p.336) had this to say: “[e]conomic theory has been much preoccupied with this rational fool ...”. Sen (1977), Hechter and Kanazawa (1997) and Sato (2013) cite several critics of the RCT. Despite the critics, Vlaev (2018) noted that rational choice theory dominates among many theoretical areas. This dominance may be explained by the argument posed by Bias, Smith and Jansson (n.d) that in many instances these critiques are baseless because, in most of these instances, the assumptions of rationality have not been violated. Therefore, it will be prudent to just limit the critics in the thesis and concentrate on the applicability of the rational choice theory in economic activities among IDPs. Having outlined the rational choice theory which explains how households make

choices of coping strategies, the next section expounds on some of the coping strategies used by IDPs.

II. Coping Strategies

Deressa, Ringler and Hassan (2010) indicate that risk management under life stressing situations like drought comes in two forms, *viz*, at the household level and government level. At the household level, coping strategies include disposal of assets (divestment) like productive assets and animals, employing child labour, depending on relatives and migration, among others. Of concern is that some of these strategies will have long term effects especially impoverishment of households. For IDPs who would have faced economic losses, these asset disposals exacerbate the situation. For instance, an animal disposal is a form of disinvestment where the family may not be able to buy the once owned animals (Bird, Shepherd, Scott & Butaumocho, 2002) and hence may live in abject poverty forever. Thus, Deressa *et al.* (2010) indicate that household-level strategies are mostly ineffective because they achieve partial insurance while being costly. A household-level strategy is said to be partial insurance in the sense that it is unsustainable and impoverishes the said household in the long run.

At the government level, strategies such as free food distribution and food for work programmes, among others, have been used. However, in such cases where free food distribution is used the affected households may end up in a dependency syndrome where they will expect the government to undertake actions without them taking positive roles, thus they end up using passive coping strategies. The free food distribution, however, may be applied well to the old aged households who, if required to do, say food for work programs, may no longer be able to do so. Deressa, Ringler and Hassan (2010) noted that, in Ethiopia, food aid has become the most widely used strategy to cope with drought. However, the government level risk-mitigation approach suffers from the limitation of coverage and dependency on foreign aid, among others. On the contrary, if applied well, government level strategies may benefit more individuals than household-level strategies.

The risk management strategies used by IDPs can also fall into two other broad categories *viz* *ex-ante* and *ex-post* strategies (Bruck & Danzer, 2007). Acevedo (2016, p.2) states that

[e]*x-ante* mechanisms address what households (and to that extent, public and private instruments) can do to reduce or prevent the occurrence of risks and mitigate the impact of the risk if an adverse event occurs

and, therefore, is a forward-looking risk management concept (Mukarami, 2017). As a result, *ex-ante* strategies are proactive in that they are instituted well before the unforeseen event occurs. Again Acevedo (2016) indicates that the *ex-ante risk* management approach can be considered as income smoothing. One such approach under income smoothing is income diversification where individuals may find ways to get income from various activities such as remittances (Amuedo-Dorantes & Pozo, 2011; Vargas-Silva, 2017). Another instance of income smoothing is where a household chooses to engage in crop husbandry as the main economic activity but at times works in other people's fields to supplement income earned from the sale of crops. At the same time, especially in rural areas, purchasing animals like cattle for sale when in a livelihood shock is considered an *ex-ante* livelihood diversification strategy. Raleigh, Jordan and Salehyan (n.d) found that income diversification is the most dominant strategy for mitigating climate change hazards in developing nations.

Other variants of the *ex-ante* mechanisms are migration and marriage. Individuals may decide to migrate to other areas where there is the possibility of reduced risk, for instance, of food insecurity. de Brauw, Mueller and Woldehanna (2017) noted that standard economic models predict that individuals migrate to improve well-being. However, in the study by de Brauw, Mueller and Woldehanna (2017) gains were mostly observed among male migrants. Migration is one variant of *ex-ante* mechanisms which can be viewed as a risk-avoidance strategy. For example, among IDPs in Arda Transau, they may move to other places to reside where there is a high probability of successful rehabilitation than in Arda Transau. Additionally, not all members of the household may migrate. Some members may migrate in search of employment hence send remittances back home (Vargas-Silva, 2017). It has, however, been proven that remittances are not usually meant to smooth income but used for other reasons (Amuedo-Dorantes & Pozo, 2011). Contrastingly, Vargas-Silva (2017) argue that remittances maximise income and diversify risk thereby smoothing income.

Marriage is another way used to insure households against risks since it allows for *ex-ante* risk diversification (Martinoty, 2015). Of note is that marriage by nature creates social capital. Arranged marriages have been used in the past in Zimbabwe as ways of mitigating risk. The basis for this arrangement was that marriage is a form of social capital and a method of transferring wealth. In situations of food insufficiency and other problems, families will help each other out. However, despite its benefits, arranged marriages usually result in increased child marriages thereby affecting future human capital by affecting the child's education.

Contrary to *ex-ante* strategies, *ex-post* strategies may be used. In this approach, households may build assets in 'good' years to sell in 'bad' years (Dercon, 2000). Whilst asset accumulation in this statement may be considered an *ex-ante* strategy, the 'selling in bad years' part is the one that places this strategy as an *ex-post* strategy. *Ex-post* strategies are meant to deal with the consequences at hand hence may be considered short-term in nature. With this in mind, it can then be noted that coping strategies are generally *ex-post* strategies. Dercon (2000) highlights that *ex-post* strategies can also be used as a way of earning extra money as well. From Dercon's (2000) perspective, it seems the definition of coping strategies by Davies (1993) may be valid, with Davies (1993) defining coping strategies as all activities engaged in by rural households. An example of an *ex-post* strategy used to earn extra income is when individuals gather wild fruits for own consumption as well as selling. Additionally, a household may engage in the sale of firewood, an activity that Davies (1993) connotes to as being "abusive". Perhaps Davies (1993) used the term abusive most likely because the strategy leads to environmental degradation if no restoration strategies are employed. In instances of coping with displacement, such replacements are rare; therefore, the term 'abusive' may be upheld in that context.

Increased labour supply may also be used as a coping strategy which may earn additional income to the household. The increased labour supply may be brought in through the "added worker effect hypothesis". "The added worker effect hypothesis states that in the eventuality of a shock on the primary earner in the household, secondary workers would enter the labour market as imperfect substitutes to smooth consumption profile at the household level" (Martinoty, 2015, p.2). In this regard, households may turn to, say, child labour should a household find itself in a shock such as food insecurity and unemployment. For instance, households relying on firewood sales, in Zimbabwe, usually engage children in the ferrying of the firewood both for sale and for

family use. It is important, however, to distinguish between household chores and child labour. On the one hand, if a minor is engaged in economic activities for wages, this may be classified as child labour. At the same time, child labour usually affects a child's education (Loewenson, 1991; ITUC, 2008; ZimStats, 2015). On the other hand, household chores do not affect a child's education because the child helps parents after school or during school holidays.

A particular instance which may culminate in child labour is whereby households sell their labour in the cultivation of other people's fields or even in large commercial farms. Usually, old family members take the young ones, who are not yet in the labour market, along with them. In Bangladesh, the added worker effect hypothesis was found to be present among IDPs where culturally women must not engage in wage employment, but after displacement women, IDPs engaged in such activities. However, the 'added worker effect hypothesis' is likely to be small because, for instance, among IDPs in Arda Transau, loss of employment by the household head will not necessarily translate to the other members getting equally or even less paying jobs. Additionally, in a life-cycle model, the added worker effect may not arise because, in the life-cycle model, the loss of income by the breadwinner will only affect household consumption if it affects permanent income. So if the loss in current income fails to reduce the permanent income, transitory reductions in income will not have effects on household consumption (Friedman, 1957) hence added worker effect fails to arise. However, given that duration of stay in post-mining-induced displacement locations is probably permanent, unless someone voluntarily migrates to another place, and that income will have fallen significantly (Cernea, 1997a), it is most likely that permanent income of the IDPs is affected hence the need for added worker effect to at least reduce the magnitude of effects of displacement. So, in Arda Transau, added worker effect may arise.

Another way of using an *ex-post* strategy is through self-insurance by precautionary saving which is analogous to Dercon (2000, p. 7)'s statement "... build up assets in good years to deplete in bad years". In this instance, households may save for unforeseen eventualities such as crop failure. Thus, they will have something to fall back on when faced with such eventualities. However, usually under circumstances such as displacement, this will be wiped off because the duration of stay in the post-displacement area is usually prolonged and sometimes one has to live there until death. For instance, in Arda Transau, if accumulated savings were to be used as a

coping strategy they (savings) will have already been depleted since some households were displaced as far back as 2011. Dercon (2000) highlights that self-insurance is far less useful because of the covariance between assets and income. Covariance between assets and income is noted in that when incomes are high, generally, economic agents acquire wealth and vice versa.

Besides self-insurance, consumption smoothing can also be applied under forced migration circumstances. Thus, households may stretch their food to defend the current consumption levels by reducing meal size and being involved in various activities (Lekprichakul, 2009) and this may prove to be useful in the short-term. Another way of smoothing consumption may be taking children to relatives so that the available food in the household can take the particular household longer, assuming that the sending household is not required to provide for the child. During that period other ways of surviving will be explored. Transferring of some family members is a form of transferring the risk of food shortage as well as risk-sharing. The other example of consumption smoothing is where a household may sell assets to make resources available to maintain a certain level of consumption. In short, consumption smoothing can be pursued to manage risk under stressful events like displacement.

Acevedo (2016) highlights that missing or incomplete markets may become obstacles to the use of *ex-post* strategies. Thus, the author argues that most households may depend on income smoothing (an *ex-ante* strategy) rather than its counterparty consumption smoothing (an *ex-post* strategy). For instance, in most post-displacement cases, access to credit from even microfinance institutions is not available because of lack of collateral security. Should any household want to borrow they have to rely on their neighbours and relatives, a type of loan that Rashid, Langworthy and Aradhyula (2006) call unsecured loans. In this sense, therefore, the use of social capital becomes necessary. The absence of credit markets, therefore, implies that even if households want to use credit to smooth consumption they cannot do so.

The use of social capital cannot be invalidated as far as coping is concerned. Thus, Andelkovic and Kovac (2016, p. 13) say

[t]he more a community is interwoven through social ties and networks, the more it can cope with and adapt to shocks. When the system is not performing well, the value of personal connections, networks and citizens' initiatives becomes more

apparent and bridges the gap between the system's delayed response and the community's imminent needs.

Therefore, coping can involve relying on one's relations with others such as relatives, friends, the community and church members, among others. In the words of Hauberer (2011, pp. 35-36), "[s]pecific goods and services can be gained directly with economic capital, others only with the capital of social relations or commitment (social capital)". OECD (2011) also noted that social capital is relational and provides benefits to members within that group. Therefore, in times of need, one can rely on their social relations, a common practice among Zimbabweans derived from the Shona language proverb, "*Kutsva kwendebvu varume vanodzimirana*" meaning in times of need individuals help one another. This is analogous to what Hauberer (2011, p.38) says when commenting on how Bourdieu defined social capital, that "[a]ccordingly, social capital is a relationship immanent capital that provides useful support when it is needed". The definition by Bourdieu that Hauberer (2011) commented on is

[s]ocial capital is the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition—or in other words, to membership in a group¹¹—which provides each of its members with the backing of the collectively owned capital, a “credential” which entitles them to credit, in the various senses of the word (Bourdieu, 1986, pp. 248-249).

The possible various senses of credit which Bourdieu (1986) might have been referring to are faith and trust, among others. The understanding in social capital circles, according to Hauberer (2011), is usually that one does not get assistance from strangers but those they are familiar with. An example where such social capital is used is when a household sends some members of the household to live with relatives and friends who would not have fallen prey to a certain shock such as drought. Thus, social capital is most likely to benefit those within the group (Bourdieu, 1986).

Some social capital characteristics may make social capital a public good (Coleman, 1988). For instance, norms of action may be determined by the social grouping as explained by the structural-consensus and social identity theories. With structural-consensus theory, all behaviour

is learned behaviour. According to this theory, people learn to behave as expected by their society in certain social settings hence the term socialisation. The social identity theory argues that for one to be identified with, say a certain group, one must abide by the rules of the said group, thereby again saying the behaviour is learned. Following these theories, Johnson and Johnson (2014, p.7) had this to say, “[n]orms are rules, implicit or explicit, established by groups to regulate the behaviour of all members. Norms tell group members how to behave, or how not to behave, in various situations. In short, the norms of a group are the group's common belief regarding appropriate behaviour, attitudes, and perceptions for its members”. Additionally, the “[s]ocial identity theory posits that people want to have a positive self-identity. They achieve this goal by demonstrating biases which create positive distinctions between their group (in-group) and other groups (out-groups)...” (Ayalon & Tesch-Romer, 2018, p. 4). Johnson and Johnson (2014) and Ayalon and Tesch-Romer (2018) concur that group membership determines individual behaviour by dictating expected norms. Layder (2006) and Seering, Ng, Yao and Kaufman (2018) noted that group members usually prefer behaviours that are consistent with the group to which these members belong. Also, Johnson and Johnson (2014) concur with Hauberer (2011) when they note that one has to join a group to derive benefits from the group otherwise one risks being sanctioned. However, group norms may benefit others who may not necessarily be group members which resemble norms as having public good characteristics. Examples of such norms that may be established by a group that benefit non-members include prohibiting public smoking or public indecency. By not smoking publicly very few people will inhale smoke therefore the society at large benefits. In the context of coping, however, social capital is mostly used as a private good since benefits are extended to members only. However, some institutions like churches provide their members with rules of conduct to be taken irrespective of whether the beneficiary is a member or not thereby, providing evidence for considering social capital as an impure public good as well.

Conclusively, the use of social capital when one is displaced is imminent. The IDPs may even choose relocation sites where they have relatives and friends to whom they may turn for assistance. *Ceteris paribus*, where choice is given to the displaced, the whole community may choose the same location to maintain their long-established standing social capital, if existing social capital structures are in good conditions.

The theories and concepts of coping strategies have been considered in this section. Various ways of viewing coping strategies such as *ex-ante versus ex-post* and household-level *versus* government level have been explained. The empirical applications of these coping strategies are considered next with consideration of determinants of coping strategies being made.

2.3.3 Empirical Literature on Coping Strategies

As far as empirical literature on coping strategies in the thesis is concerned, a cross-cutting approach is used where literature on coping strategies from all angles is reviewed. Also, a review of interdisciplinary literature was done with a view of having a balanced picture of the ways of coping with stressful life events like displacement.

Bruck (2004) looked at the agricultural coping strategies in the Northern provinces of Mozambique after the war. Just like during the war period, the displaced households concentrated more on food crop production at the expense of cash crops, a result also found among Sudanese returnees (Rahim, Jaimovich & Ylonen, 2013). Having more livestock also helped IDPs to cope with the post-war life by using organic fertiliser in crop production since they could not afford artificial fertiliser. Bruck and Danzer (2007) also established that having cattle increased agricultural income and that having cattle was a coping strategy on its own among post-war Mozambicans. Cattle can be used to increase income (or even smoothen income variations) in several ways such as selling and providing manure for crops which can then be sold. In the study by Bruck and Danzer (2007), land tenure as a form of idiosyncratic risk was also found to have a strong negative impact on farming and subsistence activities. Thus, those households who worried about land tenure had a lower share of on-farm income, the share of subsistence income and a lower probability of plot diversification. These results seem plausible because the absence of land tenure is likely to increase the risk of dispossession (Vivoda, Owen & Kemp, 2017b).

Using a multinomial logit model, Deressa, Ringler and Hassan (2010) established that coping strategies to climate extreme events are determined by various socio-economic and environmental factors. Among the demographic household factors, being male and being educated increased the probability of coping in Ethiopia. Because coping is reactive, the result that being male increases the probability of coping seems consistent with the notion that men are

less risk-averse compared to women. This is because women prefer *ex-ante* measures to *ex-post* measures. From the education variable, government policy-makers were advised to focus on developing institutions that enhance education so that copying is enabled. In a similar study by Deressa, Hassan, Ringler, Alemu and Yesuf (2010) use of different crop varieties, early and late planting were used as coping strategies to climate. Major determinants of these coping strategies were social capital, access to credit and gender of the household head.

Social capital is a common coping strategy among displaced especially African refugees (Schweitzer, Greenslade & Kagee, 2007; Levron, 2013; Barbelet, 2017; Kiboro, 2017). Schweitzer, Greenslade and Kagee (2007) found out that the Sudanese refugees in Australia use mostly three strategies to cope with trauma, namely, religious beliefs (a component of social capital), social support and personal qualities. Comparison with others who were seen as less fortunate than the refugee, what Wills (1981) termed the downward comparison, emerged as a coping strategy in the post-migration period. Again Khawaja *et al.* (2008) interviewed 23 Sudanese in Brisbane, Australia and also found out that those IDPs relied more on religious beliefs, inner resources and social support, as forms of coping with displacement during the pre-migration, transit and post-migration phases. It was established that the displaced also faced difficulties in securing places where to settle in Australia, therefore social capital becomes one solution.

Several studies also reveal that social support as a coping strategy is very useful among Sudanese (Schweitzer, Greenslade & Kagee, 2007; Khawaja *et al.*, 2008; Bello, Daoud & Baig, 2014). While Schweitzer, Greenslade and Kagee (2007) concentrated on Sudanese outside Sudan, Bello, Daoud and Baig (2014) considered women IDPs in Khartoum, Sudan with both studies concluding that social support is an important variable in Sudanese lives. Other strategies found by Bello, Daoud and Baig (2014) are street vending, buying low priced food items and second-hand clothes. Vending was used as an income-generating activity while the other two were cost-cutting measures.

Social capital has also been used by migrants in South Africa where forced migrants were found to use ethnicity and community connections to get employment (Northcote, 2015). However, ethnicity also led to a few women benefiting from connections because women were left to do

mostly child-minding activities. Again, Barbelet (2017) found that refugees of Central African Republic origin in Cameroon rely more on family and friends for food and clothes and even their spouses did so, a conclusion also reached by Levron (2013) when he indicated that Cote D'Ivoire displaceds took refuge in friends' and relatives' homes in urban centres. For Eritrean female refugees in Norway, Abraham, Lien and Hanssen (2018) also found that social support, especially among fellow Eritreans, was used as a coping strategy. Conclusively, one can note, from the various findings discussed above, that among African migrants, social capital plays a key role.

Social capital as a coping strategy, however, is not peculiar to Africans. For Iraqis, it is a common practice for IDPs to use solidarity (another proxy for social capital, Bourdieu, 1986) among community and family members as a coping strategy for lack of financial resources (Neidhardt, 2013). Social capital was also employed by former prisoners while incarcerated (Ricciardelli, 2014) where the study participants indicated that they had affiliations they belonged to which they will turn to should an altercation arise. Again, Jabeen, Johnson and Allen (2010) also found that social network was the first port of call to get help for the slum residents of Korail in Dhaka, Bangladesh. To investigate the influence of social capital on livelihood outcomes, Kiboro (2017) found out that the majority of households who belonged to local level associations obtained what they needed which influenced their livelihoods and hence were insulated from risks. In the current study, therefore, social capital is considered as a coping strategy that can be heavily relied upon by IDPs. Social capital can reduce transaction costs especially those related to information.

However, Barbelet (2017) found that in as much as social support is helpful it has a limit beyond which it can no longer be used. In the study by Barbelet (2017), one participant indicated that they could not be accommodated beyond 10 months because of the host members' capacity. Also, Levron (2013) indicated that sheltering displaceds places a burden on hosting households thereby increasing the risk of food insecurity.

Religious activities such as praying and seeking support from other church members have also been largely used as coping strategies against various life-changing events such as displacement and illnesses. In the words of McDougle, Konrath, Walk and Hany (2015, p.3) "... religious

coping is considered to be a coping method that is consciously chosen by individuals in their efforts to deal with stressful situations”. Thus, from this idea, McDougle *et al.* (2015) argue that religious coping strategies are different from religiosity in that religion as a coping strategy is used to mitigate against the negative effects of stressful life events such as displacement while religiosity “... is often operationalized in many studies using the frequency of prayer or church attendance” (McDougle *et al.* 2015, p. 3). The religious coping strategies come in two forms *viz* individual and social approaches. Examples of individual religious coping strategies include private prayers and reading religious texts to alleviate stress while those for social approaches are attending religious services and or joining bible study groups (McDougle *et al.*, 2015). One has to bear in mind that the main objective of these activities is to alleviate stress.

Like Khawaja *et al.* (2008), Halcon *et al.* (2004) had earlier found that among Somali and Oromo refugee youths in the United States, 55.3% used prayer as a coping strategy. The study also found that women were more likely to talk about their problems with friends than men, whereas men were more likely to do exercises as a coping strategy than women. In this regard, religion creates more like a protective shield that minimises negative feelings. These may enhance positive feelings of everything even those that may inflict negatives.

Praying, as a religious activity, has been used as a coping strategy to stressful events, for instance, in the USA after the September 11th terrorism attack (Spence, Lachlan & Burke, 2007). Thus, one’s connection with God can be used as a strategy to minimise the effects of stressful life events like displacement. In a nutshell, as far as religion as a coping strategy is concerned, one has to note that in as much as the frequency of attending religious activities may be a measure of religiosity, it may also be pursued as a coping strategy under stressful events such as displacement. Thus, when one is in stressful life events, they may become more religious, thereby enhancing one's religiosity. Contrary to most literature reviewed here, the current study looks at religion as a determinant, not a dependent variable. The understanding of this study is that social capital helps IDPs with information about how to cope and the relevant information about ways of coping. Based on that information, a household will then choose a coping strategy to employ.

While in most cases the people who will be coping will be those directly affected, those who are indirectly affected by stressful life events may also need to cope. For instance, in the event of one's relative falling chronically ill, the caregiver may need coping strategies. Such instances have been studied, for instance, by Rathier *et al.* (2015) whereby the focus was on caregivers of a family member with dementia and Pearce, Singer and Prigerson (2006) who focused on caregivers of terminally ill cancer patients and found that religious coping increases the burden on caregivers. It was established by Rathier *et al.* (2015) that religious coping strategies worked well for caregivers. For example, higher levels of religious working with God decreased depression. Working with God involves solving the problem through a partnership with God (Rathier *et al.*, 2015) alternatively termed the collaborative coping approach (Tarakeshwar & Pargament, 2001). Thus, the person who will be coping with stressful events will actively seek solutions but also turns to God for assistance. One of the statements common among those who use this strategy among Zimbabweans is "*Mwari ari mubatsiri wedu*" translated to "With God as our helper". The implication is that with assistance from God, all will be achieved. The need for coping by indirectly affected members could also happen when displaced families seek refuge in relatives' homes, as what happened during Operation *Murambatsvina*. The provider may need to cope with the increased demand for resources to sustain the family. In summary, it can be stated that in as much as the directly affected need coping, the indirectly affected may also need to cope with stressful events.

Rathier *et al.* (2015) indicate that the other religious coping strategy used in stressful life events is working through God. In this approach, individuals plead for direct intervention from God. This is common when individuals seek miracles to happen to change their situation. Thus, in this approach, God has the responsibility to solve the problem and he (God) has to do it. The person who needs God's intervention may need not to do anything because they are only passive recipients of the benefits. From this perspective, therefore, Tarakeshwar and Pargament (2001) term it the deferring approach implying that the person who is coping defers his activity for God to firstly do it. On the contrary, self-directed religious coping involves individuals receiving resources from God for them to change their situation (Rathier *et al.*, 2015). In this instance, God does not solve the problem but gives one the resources to do so, for instance, good health to work for the family. Additionally, though it may be viewed differently, the self-directed approach can

be considered as an approach where the individual does not rely on God but themselves (Tarakeshwar & Pargament, 2001). The thin distinction between *working with God* and *self-directed* coping strategies is that the former involves the individual using own resources and turning to God for help while the latter involves God providing only the resources then one has to use own initiatives to mitigate against the adverse effects of the event. From Pearce, Singer and Prigerson (2006), religious coping was found to have an increased burden on caregivers. In short, both working with God and self-directed strategies can be considered as approaches where individuals need God's assistance in one way or another for them to cope with stressful life events such as displacement.

Fellowshipping is also one approach used as a coping strategy. Among the female Eritrean refugees in Norway, Abraham, Lien and Hanssen (2018) found that fellowship and social support from peers were widely used by the refugees. The refugees felt like a family just by fellowshipping with each other, hence created a family of its kind. Also "... religious beliefs helped the refugees to cope with their situation and contributed to hope for the future" (Abraham, Lien & Hanssen, 2018, p.363). In line with this argument, those who are more religious may turn to God even in times of displacement and put their hope in God that one day the effects of displacement may not be as negative as they may be without God's intervention, thus working with God to solve their problems. Spence, Lachlan and Burke (2007) established that women and non-white respondents who were displaced from New Orleans were, in the aftermath of Hurricane Katrina, more likely to resort to prayer than men and white respondents. The trio also found that high-income earners are less likely to resort to prayer than low-income earners in such times of stressful events like displacement by natural disasters. In a related study, Jabeen, Johnson and Allen (2010) found that in Bangladesh, households in Korail, Dhaka, also rely on faith when disasters such as floods struck them. In short, it can, therefore, be stated that prayer has been a useful coping strategy among forced migrants.

From an economics perspective, Jabeen, Johnson and Allen (2010) found that the slum residents in Korail, Bangladesh, used saving as a coping strategy. It was found that 50% of them saved with NGOs and savings groups. This was viewed as a preventative coping strategy, because of its *ex-ante* nature, since the residents would use those savings to access loans during times of hardship. Thus, by saving with the lenders, one increased their chances of getting the required

loan amount when the need arose. In the Philippines, about 42% of respondents from the Leyte area used family savings as a coping strategy against climate change effects (Israel & Briones, 2014). However, in as much as savings may be a good strategy, savings may be affected by inflation, particularly in unstable economic environments. Also, prolonged shocks cannot be coped with by savings since the savings will soon be exhausted.

In the Indonesian city of Ambon, Adam (2008) established that informal market activities were the order of the day after the conflict-caused displacement. Adam also argued that these coping strategies must be appropriately termed coping mechanisms, due to their short-term nature and that these mechanisms have caused more impoverishment. However, the displaced individuals, especially women, showed a proactive attitude because of the access they had to the informal sector than their male counterparts, thus, corroborating findings by Borghans, Gosteyn, Heckman and Meijers (2009) that women are more risk-averse than men. The implications of the notion of women being more risk-averse than men are that women will be more likely to use *ex-ante* strategies since *ex-ante* coping strategies are proactive by nature.

Horn (2009) argues that coping strategies used by Northern Ugandan IDP camp residents mainly consist of assistance from others, work and income generation and social support. It was established that the residents resorted to social support to make practical assistance possible when it was needed. A finding similar to that by Horn (2009) is the one by Helgeson, Dietz and Hochrainer-Stigler (2013) where the majority of farmers obtained funds from family and friends. Among the work and income generation strategies, cultivation was impossible in the Ugandan case because of movement restrictions since these camp residents were accused of either being rebels or rebel collaborators (Horn, 2009). Unlike Horn (2009), Helgeson, Dietz and Hochrainer-Stigler (2013) found that asset disposal, especially livestock, was mostly used as a coping strategy among weather disaster-induced IDPs. This was considered a surprising finding because it violates predictions of asset-based theories of coping. Asset-based theories advocate the use of other strategies like meal portion adjustments thereby avoiding productive asset disposals. Even though sometimes used, productive asset disposal is usually avoided because it reduces the future capacity to generate income. For instance, disposing of land without replacement may expose households to vicious cycles of extreme poverty. However, in Uganda, selling land and taking children out of school were not largely used especially among the more educated household

heads. The two Ugandan studies may be considered to agree in saying IDPs use social support when in trouble although Helgeson, Dietz and Hochrainer-Stigler (2013) also established that productive asset disposal was sometimes employed.

Time also plays a pivotal role in decision-making for purposes of coping. Bozzoli, Bruck and Muhumuza (2011) studied the effects of length of the period of staying in an internally displaced persons' camp in Northern Uganda on activity choices. The findings indicate that camp duration is a significant determinant of activity choices, the same as the findings among Central African Republic refugees in Cameroon (Barbelet, 2017). Findings in Colombia also show that those people who have been at a place relatively longer than other IDPs tend to get formal jobs than their counterparts (Lopez *et al.*, 2011). The time that someone has spent at a place makes them familiar with the area such that even the type of crops to be cultivated and other viable economic activities will be better known to them than the recently arrived IDPs. Bozzoli, Bruck and Muhumuza (2011) also found that Northern Uganda displacees living in camps were more into cultivation and trade than their counterparts who returned, the so-called returnees. In the current study, it is proposed that those who were displaced earlier may be better informed than their counterparts displaced at a later date hence they are likely to choose economic activities that yield better results because of superior information, of course assuming information asymmetry. However, because of social cohesion new and old families may share ideas, creating information symmetry, such that duration of stay may not affect the choice of coping strategy. Lopez *et al.* (2011), however, noted that the relationship between recent displacees and those who have stayed a bit longer tends to be complex such that use of social capital may fail in the long-run. They found that the competition for public space is usually the source of hostilities. To that effect, the sharing of ideas may be short-term in nature. Therefore, although information symmetry may be possible, asymmetry seems more plausible given the self-interest rationality pursuit by individuals as explained by Sen (2002). However, Sen (1977) could be right to say the pursuit of rationality yields rational fools. This could be so because when individuals do not share information, they may also fail to get the necessary information they also need, therefore being consistent with the popular 'eye for an eye' adage. It is, therefore, a better strategy if IDPs share the knowledge they currently have to make the whole community better off. The use of the

advice on existing opportunities was also used in Cameroon among CAR refugees (Barbelet, 2017).

Education has also been argued to determine the choice of a coping strategy (Rashid, Langworthy & Aradhyula, 2006) with the transmission mechanism from education to the coping strategy being through income. It is argued that households with high levels of education tend to have stable incomes and more diversified income sources than the less educated ones. Thus, income diversification reduces the need to use coping mechanisms where other individuals will apply it. Rashid, Langworthy and Aradhyula (2006) also indicate that the pattern of coping strategies also depends on the nature of the shock and household characteristics whereby household characteristics include the level of education, among others. Alzoubi, Al-Samadi and Gougazeh (2017) also found that among Syrian refugees in Jordan, high education led to high incomes and satisfaction with that income. Therefore, the attained education was used as a coping strategy to get a job and earn a living (Alzoubi, Al-Samadi & Gougazeh, 2017). Again, those with higher education had a high probability of getting employed and had higher problem-solving scores which enabled them to fend for their families.

One coping strategy that Rashid, Langworthy and Aradhyula (2006) and Israel and Briones (2014), among other authors, identified is the adjustment of meal portions, which is, reducing household food consumption. In Bangladesh, Rashid, Langworthy and Aradhyula (2006) found that about 72% of households used reducing meal sizes as a coping strategy. The adjusting of meals includes reducing the number of meals eaten such as having one meal a day or the extreme case, going without any meal the whole day and or reducing the size of each meal portion. The adjustment of meals was also found among Sudan female IDPs in Khartoum (Bello, Daoud & Baig, 2014) where 56.7% of respondents restricted meals to one per day. This was necessitated by the inadequacy of income to buy the necessary food items. Additionally, Israel and Briones (2014) found that 47% of non-agricultural households and 76% of landless households in East Laguna Village, Philippines, use reduction of food consumption as a coping mechanism while 79% of all flood-affected households cope by eating less preferred food.

Another avenue used by households along the food strategy is stocking (hoarding) food items and buying less preferred food as was done in the Philippines case studied by Israel and Briones

(2014). In instances where the event leading to the need for coping is temporary, stocking piles of food items is an approach that can work. However, where coping is needed for long periods, the food will soon be depleted thereby rendering the strategy short-term in nature. Contrary to the literature suggesting current consumption being reduced during disasters, Hegelson, Dietz and Hochrainer-Stigler (2013) established that rural Ugandans used it less frequently. They explained that this approach could not be used because households were already at subsistence level beyond which further reductions in food consumption will yield severe consequences for lives.

Another possible coping strategy employed by IDPs is livelihood diversification with those IDPs mostly used to agricultural activities using crop diversification. Livelihood diversification is the process by which households construct a diverse portfolio of activities and social support capabilities for survival and to improve their standard of living (Ellis, 1998). Alternatively,

[l]ivelihood diversification refers to a household's attempt to reduce its vulnerability by having more than one livelihood activity. In a diversified household, if one productive activity does not provide enough, or fails, there are other sources of livelihood that the household can fall back on (de Satge, *et al*, 2002, p.11).

Ellis (1998) accepts that livelihood is more than just income. A livelihood diversification strategy can be applied by both the poor and the rich albeit from different perspectives. The rich apply diversification from the perspective of accumulating wealth which is termed opportunity-led diversification. From the poor people's side, it is viewed as a strategy for survival hence the term desperation-led or distress-push diversification (Motsholapheko *et al.*, 2012). In this study, livelihood diversification is mostly viewed as desperation-led diversification because of the nature of the study.

From the afore-mentioned, and given that the IDPs are usually not familiar with the soil requirements and cannot afford to send the soil samples for testing, IDPs may resort to growing various crops, as found by Deressa, Hassan, Ringler, Alemu and Yesuf (2010), in an attempt to find out the one that suits the environment especially during the early years of resettlement. This, however, is not peculiar to IDPs alone but has also been found to be used by farmers especially

when faced with diseases that lead to crop failure or faced with climate change and or weather shocks. An example of crop diversification is the growth of new species of cardamom by farmers in Eastern Nepal (Sony & Upreti, 2017) where the approach was applied when the existing crop was hit by diseases. Some of the farmers turned to burn their fields as a strategy to destroy the disease permanently but this did not help in any way. Only crop diversification yielded positive results.

Diversification as a strategy to cope with stressful events comes in various forms. For instance, in the Ogbozor (2016) study, households diversified their activities by engaging in vertical diversification through fishing, herding and farming, among others, as a coping strategy against displacement by Boko Haram insurgency. Horizontal diversification through crop diversification has also been used to cope with climate change effects (Deressa, Hassan, Ringler, Alemu & Yesuf, 2010; Mulinya, 2017). With horizontal diversification, farmers were found to grow more than one crop at a time such as drought-tolerant crops, agroforestry and even crop rotation (Mulinya, 2017). In Okavango, Delta households used livelihood diversification when faced with extreme floods (Motsholapheko, Kgathi & Vanderpost, 2012). Also, it was found that the main livelihood activity in Okavango Delta was livestock farming undertaken by 73%. It was also found that the choice of diversification strategies was determined by socio-economic status with high-income earners adapting more to the effects of floods than poor ones.

Migration has also been used as a livelihood diversification strategy (DFID, 1999; Nothcote, 2015; Neidhardt, 2013). Migrants in Cape Town used migration between formal and informal sectors as a coping strategy (Nothcote, 2015). Even physical migration has been used as a coping or livelihood strategy, for instance, Neidhardt (2013) established that men often shuttle between Syria and Iraq while Siddiqui (2003) established that migration has been widely used as a livelihood strategy by Bangladesh nationals. Migration on its own to be considered a livelihood strategy may be considered to be vague. However, through migration, one can then engage in livelihood activities which can then be considered livelihood activities such as migrating to find a job just like Zimbabweans in the diaspora who will then send remittances to relatives back home. In some cases, families may encourage their members to migrate so that the migrant will remit, thus helping the family. In Uganda, the migration of adult sons in search of employment in agricultural work has been used as a livelihood strategy (Dolan, 2004). In the study by Dolan

(*ibid*), females were denied the room to constantly migrate by cultural norms, therefore gender became a deterrent to coping, thus confirming the assertion by Chambers and Conway (1991) that some coping strategies are determined by the accident of birth.

Migration as a coping strategy has its unique benefits to those who remain behind. Instances of diaspora remittances have been spelt out in literature with its benefits well documented. For example, the migrant may have a motive to return hence feels the need to remit so that they may be highly acceptable and respectable when they return. Such instances may happen when someone flees targeted political violence where the migrant will be the only one or among the ones targeted. Four main variants of motives to remit have been identified *viz* altruism, self-interest, insurance and loan repayment (Vargas-Silva, 2017). Under altruism, Vargas-Silva (2017) indicates that the displaced will remit to improve the welfare of those in the home area while under self-interest they do so to improve themselves. Thus, under self-interest, IDPs may remit to develop their wealth-base so that when they return they have something to fall back on. Under the insurance motive, the migrant, and those who remain behind, may be facing different risks hence in the event of a shock they assist each other, therefore, it acts as a risk-reduction method which is *ex-ante* in nature. Contrary to the three motives explained previously, the loan repayment motive is to pay for investments done on the IDP by those who remained. For instance, someone who might have been assisted to escape political violence feels the social obligation to repay the assistance by remitting something home, with the obligation being a characteristic of social capital (Bourdieu, 1986; Colema, 1988). However, the major problem faced by relying on remittances is expounded by the 'remittance decay hypothesis' which states that an individual will end up remitting less or even nothing as time passes. This is explained as being based on the reason that the length of time away from home leads to weaker ties with those in the pre-displacement area and hence reduces the probability of returning thereby reducing the motive to remit. In the context of the current study, some families might have relatives who are still in Chiadzwa, and therefore, because of the motives to remit, they may need to take care of those who remained behind.

Another avenue to view migration is when it is permanent where an individual might migrate forever to, may be, move away from the stressful life event. For instance, IDPs may migrate from IDP camps to find other places to live. Such a migration stance can be taken by IDPs in

Arda Transau who can find other places of their choice and engage in activities of their choice as well, therefore, trying to reduce the effects of forced displacement.

Conflicts destroy livelihoods directly by causing death and destroying property, changes in household composition and economic status and displacement and indirectly by limiting freedom of choice and adaptive behaviour and social relations. The Boko Haram insurgency has led Lake Chad Basin community to adopt several coping strategies. Among these strategies include migration where several individuals are involved in inter-state migration (Ogbozor, 2016). Also, temporary fishing camps have been the order of the day though dating back to the pre-Boko Haram era. Some of the residents have diversified their activities such as a farmer becoming a farmer-fisherman as a way of coping with the changing climatic conditions in the basin. Another approach used by IDPs in Lake Chad Basin is living with the host community instead of being in IDP camps. This is considered a coping strategy from the social capital front. Thus, building relations with host communities and relying on the host community's generosity has given room for the IDPs to be hosted. With such a multiplicity of activities done, households in Lake Chad Basin may be considered to have diversified their livelihoods in a bid to mitigate the effects of displacement.

Weather shocks are among several shocks requiring the use of coping strategies. For instance, when faced with crop failure due to a rainfall shock, one has to find means to survive until the next harvest. One such approach is to ration food in such a way that it lasts longer. In rural Ethiopia, findings from data spanning for fifteen years indicate that, on the one hand, formal social safety net transfers help in reducing rainfall shocks on consumption (Gao & Mills, 2017). On the other hand, off-farm employment was found effective in smoothing consumption as a result of the shocks since additional income could be earned from it. However, it was noted that food rationing will most likely work if the household is still above the subsistence level because if applied at when the household is at subsistence level it has dire consequences (Hegelson, Dietz & Hochrainer-Stigler, 2013).

Coping and livelihood strategies also differ significantly according to gender. For instance, Renner and Salem (2009) established that while women, among asylum seekers and refugees, concentrated on taking care of children and indoor activities, men looked for employment to feed

the family and also socialised more. To find differential effects of gender on livelihood diversification in Uganda, Dolan (2004) found that female-headed households had distinct constraints from male-headed ones. Chief among these constraints were cultural norms and access to productive resources. Additionally, it was found that gender differences exist among coping strategies used with regards to problem-solving and support seeking, among others (Seguin, 2016). This strand of literature may be viewed as an indicator that gender plays a significant role in determining how one copes with stressful situations, thus some strategies are masculine while others may be viewed as feminine. This corroborates the claim by Chambers and Conway (1991) on accident of birth being a determinant of coping strategy used. However, it is undeniable that coping can be cross-cutting across gender where males may employ those strategies that may be associated with women and *vice versa*. The main reason may be emanating from the upbringing. Those ladies raised among boys may apply mostly those approaches that may be considered to be masculine by nature and *vice versa* for boys raised among girls.

2.3.4 Conclusions on Economic Activities

As can be noted from this section, most of the existing literature does not consider the determinants of choice of livelihood strategies, especially among IDPs. Additionally, Bozzoli *et al.* (2011) iterated that scant literature on economic activities of the displaced exists, hence the need for this study. The current study concentrates on the displaced who are assumed to stay in the new place forever. The Arda Transau residents are then expected to undertake long term strategies that will sustain their lives in the new area. Having been given arable land, it is expected that they will undertake agricultural production among other coping strategies. However, the size of the land (one hectare) then requires critical decision making involving making necessary rational choices among various livelihoods strategies. The size of land as a determinant of choice of adaptation was found by Bryan, Deressa, Gbetibouo and Ringler (2009).

Reviewed literature also showed that the social-consensus theory applies to economic activities. For example, because of the expected norms, as explained by the social-consensus theory, individual migrants may be forced to remit home as a thank you to those who assisted in

migrating. Again, in line with this theory, social capital and social support may be widely used among IDPs.

It has been revealed in Section 2.2 that IDPs lose after displacement despite the expected gains as espoused by neoliberal economics. The literature reviewed in Section 2.3 showed that after displacement, households engage in coping strategies to survive. The choice of coping strategies is determined by the expected utility as explained by rational choice theory. However, given human capability limitations, IDPs make use of bounded rationality. Therefore, it can be deduced that IDPs welfare is affected by displacement. One such argument may come from Pareto efficiency which argues that no one can be made better off without another being made worse. Thus, a development project cannot improve national welfare without necessarily affecting IDPs' welfare in one way or another. The same could be said about resource curse, where natural resource-abundant nations have generally performed poorly in welfare terms. Therefore, Section 2.4 considers SWL among people facing stressful life events in general, and forced migrants, in particular.

2.4 Satisfaction with Life

Having established the consequences of displacement and the associated changes in economic activities from literature, this section considers the link between displacement and SWL. The literature is bound with researchers studying subjective well-being among different countries, within countries and across cultural groupings with results being marred with controversy. However, “[w]ell-being is a complex construct that concerns optimal experience and functioning” (Ryan & Deci, 2001, p.141). Again, life satisfaction is one of the three components or indicators of subjective well-being (Diener, 1984). Subjective well-being is argued to be composed of a cognitive judgement of life satisfaction, pleasant or positive affect and unpleasant or negative affect (Diener *et al.*, 1999; Ryan & Deci, 2001; Veenhoven, 2006). To this end, life satisfaction is a cognitive element of subjective well-being. The definition of life satisfaction has, as yet, not been agreed on. According to Shin and Johnson (1978, p.478), life satisfaction “...should be viewed as a global assessment of a person's quality of life according to his own chosen criteria”. On a similar note, Pavot and Diener (1993, p.102) consent that “... life satisfaction is a conscious cognitive judgment of one’s life in which the criteria for judgment are

up to the person”. Another way of viewing life satisfaction is as “... the way a person evaluates his or her life and how he or she feels about where it is going in the future” (Rathore, Kumar & Gautam, 2015, p.21). The definition by Rathore, Kumar and Gautam (2015) seems to emanate from the scales of life satisfaction, for instance, the one developed by Diener *et al.* (1985), where one is given the chance to evaluate their overall life. With the wide array of seemingly confusing definitions, one may be right to say no agreed definition of life satisfaction exists as yet. The definitions, given so far, have one thing in common; that “... wellbeing is an individual-level concept” (Veenhoven, 2008, p. 44).

Given that life satisfaction depends on one’s judgement, then the question is, ‘what exactly is considered in setting the standard?’ The standard that a person sets for themselves depends on other people, who may be neighbours, past circumstances, needs, goals and perceived ideal circumstances (Diener, *et al.*, 1999). Therefore, various theories, some of them explained in the thesis, exist as to what determines SWL.

This section on SWL is organised as follows: Firstly, theories of subjective well-being are discussed followed by a comparison between satisfaction with life and happiness as components of subjective of well-being. Secondly, an analysis of the orientations to SWL is done in Section 2.4.3. Thirdly, subjective well-being scales and determinants of SWL are discussed in Sections 2.4.4 and 2.4.5. Finally, Section 2.5 concludes both the section and the chapter.

2.4.1 Theories of Subjective Well-being

In the area of subjective well-being, various perspectives exist with two seemingly dominating the field of positive psychology. Thus, life satisfaction, as viewed by some psychologists, can be classified into two views, *viz* eudaimonic and hedonic perspectives, each with its variants though, of which these variants are generally beyond the scope of the thesis. This section unravels some of the theoretical literature relating to satisfaction with life starting with hedonic and eudaimonic approaches.

2.4.1.1 Hedonic Perspective

Hedonic perspective refers to the pleasurable activities for achieving a good life (Vellar-Brodrick, Park & Peterson, 2009). It aims at maximising pleasure and minimizing pain among

the majority since it argues that “... only pleasure is intrinsically good, and pain is the only intrinsic bad” (Brey, 2012, p.2). By aiming at minimising pain among the majority, hedonism seems to be related to utilitarianism by Bentham (1823) and Mill (2001). In their utilitarianism theory, Bentham (1823) and Mill (2001) aimed at the greatest happiness principle where happiness among the majority is the aim. Again, hedonism is the affective component of happiness (Schimmack; 2003). It can also be argued to be a “... *hedonic balance* of pleasant and unpleasant moments” (Schimmack, 2003, p. 79). The hedonic perspective argues that people's satisfaction with life depends on the valuation of their experiences of pleasant and unpleasant moments, thus the individual is the ultimate judge of their satisfaction with life. Also, hedonic balance is argued to determine life satisfaction more in individualistic cultures, for instance, the USA than in collective cultures such as Ghana (Schimmack, *ibid*). Along the lines of research, the hedonic dimension is quantitatively assessed using the Satisfaction With Life Scale (Fave *et al.*, 2011). On the one hand, from the hedonic perspective, it may be argued that displacement leads to low satisfaction with life since the experience of displacement represent an intrinsic bad to the IDPs and possibly to host communities. On the other hand, the good for the majority argument may also argue that, in development-induced displacement, the majority of a nation's citizens will likely derive more utility from the project than the utility lost by the displacees.

2.4.1.2 Eudaimonic Perspective

Contrary to hedonic perspective, eudaimonic perspective takes well-being as distinct from happiness. According to Drakulic (2012), the term eudaimonia was first used by Democritus (460 to 370 BC) as referring to a state of happiness. In this regard, it is argued that not all desires that are met will yield well-being (Ryan & Deci, 2001). Therefore, the major focus of the eudaimonic approach is the self-realisation (Waterman, 1993) or what Maslow (1943) term self-actualization, where one needs to be the person they think they want to be, of course being cognisant of the fact that not all desires met will yield well-being (Ryan & Deci, 2001). Again, while Waterman (1993) equated the aspect of eudaimonia to personal expressiveness, Fave *et al.* (2011) take it as meaning in life. Brey (2012) also claim that eudaimonic approaches go beyond the subjective experiences of individuals. However, consensus on how eudaimonia is defined is still to be reached (Biswas-Diener, Kashdan & King, 2009).

In sum, the two (Eudaimonic and Hedonic) approaches appear to be dissimilar (Fave *et al.*, 2011). Along that line of argument, Fave *et al.* (2011) claim that subjective well-being is the same as hedonic while psychological well-being must be equated to eudaimonia. From this line of thinking, this study mostly pursues the hedonic approach line of argument because its major thrust is on satisfaction with life, a component of subjective well-being, which is a position also shared by Brey (2012). However, Biswas-Diener, Khashdan and King (2009) and Oles and Jankowski (2017) argue that although hedonic and eudaimonic perspectives to well-being seem dissimilar, they are not opposed to each other. This may mean that the two are complementary to each other.

2.4.1.3 Stoicism

This theory is a variant of the eudaimonic perspective of satisfaction with life. In this regard, humans are in charge of every event in their life such that life remains usual because the individual would rarely be prone to extremes in life's events. Thus, stoics have a more reserved attitude towards human happiness (Drakulic, 2012). The theory hinges on the slogan, "[c]arry on and abstain" or the so-called "[g]ently flowing Life" (Drakulic, *ibid*, p. 32). To put this theory into perspective, consider the Arda Transau displaced persons. On the one hand, a displacement is an event not likely to be taken lightly by many but if these IDPs show that their levels of life satisfaction remain relatively the same before and after displacement, it is a good sign of being stoics. On the other hand, even if the new life poses more pleasant moments than the one in Chiadzwa, these households may remain at the same level of satisfaction with life if they are to be considered stoics.

2.4.1.4 Set Point Theory

The setpoint theory was propounded by Headey and Wearing (1992). According to the set point theory, SWL hovers around its general level and returns to this point after certain events have taken place (Easterlin, 2001; Headey, 2007; Grover & Helliwell, 2019; Charles, Wu & Wu, 2019). Fujita and Diener (2005, p. 158) define the setpoint as "... a personal baseline that remains constant over time". To Headey (2006), the setpoint theory implies that most people generally have a stable subjective well-being level. Additionally, Headey (2007) and Luhmann and Intelisano (2018) argue that this set point proposition holds for adults and is mostly due to some hereditary factors. Fujita and Diener (2005) and Charles, Wu and Wu (2019) suggest that events, which may be unexpected, for instance, in the case of this study displacement, are the possible

causes of moving away from this set point. However, expected events also have effects on the level of SWL. Grover and Helliwell (2019) use an example of marriage and suggest that, just before and immediately after getting married, individuals experience higher levels of satisfaction with life. As time passes, the set point theory predicts that SWL will revert to its usual position. The potential reason for reversion to the original point is the adaptive behaviour of individuals (Charles, Wu & Wu, 2019). Grover and Helliwell (2019) however failed to find the existence of the set point theory among Britons. Criticisms levelled against the setpoint have shown that it sometimes does not hold. For instance, Headey (2007) cited that exceptional events like the tragic death of a child would not allow one to return to the set point.

2.4.1.5 Social Comparison Theory

Despite the long history of comparison theory, Festinger (1954) is probably one of the major proponents of the social comparison theory (Jasso, 2001). The theory argues that individuals prefer to evaluate themselves using objective and non-social standards. However, in the absence of these standards, individuals will compare themselves with other individuals (Taylor & Lobel, 1989, Wood, 1989). In this theory, therefore, life satisfaction is determined by how one can compare himself/herself to others. This reference norm hypothesis again needs to be elaborated as to who this reference group is made up of. Thus, the reference norm hypothesis notes that individuals compare themselves more to those close to them in terms of proximity (Rickardsson & Mellander, 2017). According to Jasso (2001, p.669), "... comparison theory-that humans compare themselves to others and/or to previous or envisioned selves, and thereby experience happiness, well-being, self-esteem ...". These comparisons come in various forms but usually the ability to attain material basic needs, as proposed by Maslow (1943) and Doyal and Gough (1991), dominates. Thus, income comparison comes as a key issue in life satisfaction across individuals. Moreover, individuals may be satisfied with their life once they compare themselves with others who are less fortunate than them (Wills, 1981) thereby indicating the downward comparison version of the Festinger theory. Therefore, SWL will be derived from perceiving one's self as being better than the person who is being compared to. Another version of the social comparison theory is the upward comparison where one person compares himself/herself to others who seem to be better than him/her or individuals strive to be better than their current status. Individuals who strive to be better than their current status are, therefore, said to be

comparing themselves against themselves (more still to come in successive paragraphs). In the context of upward comparison then, IDPs may report a higher future life satisfaction score than their current level. Proponents of this theory claim that the main reason for comparison is to improve one's self-esteem (Wood, 1989). Of note is that it is not always true that one feels happy because one other person (reference group) is less fortunate than him or herself since some people get pleasure from seeing others happy which makes the former individuals happy as well.

On another note, changing reference norms may also affect levels of satisfaction with life (Rickardsson & Mellander, 2017). For instance, Rickardsson and Mellander (*ibid*) argue that asking respondents about what income level they would want to be happy, individuals usually base their comparison with their current income and are likely to report an upper level irrespective of the current absolute income level thereby being aligned to the upward comparison model. It is, therefore, very important to consider this when asking questions relating to social comparisons. According to Rickardsson and Mellander (2017), empirical findings to that effect have not resulted in biased findings. A possible explanation for that is the attribution theory. The attribution theory notes that "... people strive to be accurate in their views of the world" (Wood, 1989, p. 232) and, therefore, Ferrer-i-Carbonell (2013, p. 35) stated that "[t]here is enough evidence to be confident that individuals are able and willing to provide a meaningful answer when asked to value on a finite scale their satisfaction with their own lives...". In line with this, Raynor and McFarlin (1986) and Trope (1986) noted that individuals are interested in accurately reporting their self-evaluation. Therefore, as far as SWL is concerned, individuals report accurate scores of their SWL as was noted by Raynor and McFarlin (1986), Trope (1986) and Ferrer-i-Carbonell (2013).

The hypothesis propounded by Festinger (1954) is sometimes referred to as the "similarity hypothesis". This comes from the fact that individuals compare themselves to similar others (Krueger, 2000). Along those reasoning lines, Clark and Senik (2009) found that colleagues are the most cited reference group. Also, they established that those who compare to colleagues are happier than those who compare to other benchmarks. In Arda Transau then, individuals will most likely, be comparing themselves against those in similar circumstances meaning their neighbours are the first candidates for comparison.

Another possible comparison group is the-self. In the self-comparison, one's reference group is themselves (Jasso, 2003). This form of reference norm is analogous to the upward comparison theory as explained before with the only difference being the comparison group. In the self-comparison approach, one compares where they currently stand with where they think they might have been. The benchmark in this futuristic self-comparison approach, will, therefore, mostly be the individuals' life targets. One who feels they have met their set life targets is likely to report being satisfied as compared to one who considers themselves as having failed to meet these targets or what Maslow (1943) referred to as self-fulfilment in his self-actualisation need. This can be taken to explain life satisfaction as determined by aspirations as per Easterlin (2001). Also, it is possible, for one to compare their current status with their past and then evaluate life satisfaction based on that. Referring to income comparisons, this comparison with the past was termed habituation by Clark, Frijters and Shields (2008). When one finds themselves at a better position than before, they are likely to be satisfied with life than when they find themselves worse off than previously. In line with displacement, therefore, IDPs are likely to compare themselves with their current neighbours, previous neighbours and themselves in determining how satisfied they are with their lives.

2.4.2 Life satisfaction and Happiness compared

While life satisfaction and happiness may be treated equally such as argued by Easterlin (2001), Ambrey and Flemming (2011) and Masferrer (2016), other authors treat the two as different but complementary aspects (Vellar-Brodrick, Park & Peterson, 2009; Kim, Kim & Park, 2016; Bieda *et al.*, 2019; Van Aardt, De Clercq & Meiring, 2019) with Van Aardt, De Clercq and Meiring (2019) again agreeing that they may be considered to be the same. Usually, life satisfaction refers to a general evaluation of one's life given the prevailing situation while happiness is a short term element of the same. Happiness is usually a result of certain arousals (Bieda *et al.*, 2019), therefore, short-term in nature. Therefore, an evaluation of happiness over a relatively long period is considered satisfaction with life. The question that remains unanswered is 'How long is long?' Possibly, the disagreement on the answer to this question makes other authors to treat happiness and SWL as the same. However, Sirgy (2012, p.13) highlights that "... happiness is more than feelings of joy" while "[l]ife Satisfaction is viewed as a "cognitive" conceptualization of happiness or subjective well-being". That life satisfaction is a cognitive

component of subjective well-being has also been indicated by Diener *et al.* (1999), Ryan and Deci (2001) and Veenhoven (2006). Again, happiness has a temporal instability as compared to SWL (Bieda *et al.*, 2019).

In the current study, the distinction between happiness and satisfaction with life is not of importance, hence the study treats them equally, as was also done by Easterlin (2001), Ambrey and Flemming (2011), Ferrer-i-Carbonell (2013), Masferrer (2016) and Van Aardt, De Clercq and Meiring (2019), however, where need is, satisfaction with life takes precedence. The preference of satisfaction with life over happiness is in line with Rojas (2004, p.4) who noted that SWL "... is less volatile and is more cognitive oriented than happiness". That SWL is less volatile was also acknowledged by Bieda *et al.* (2019). Therefore, since this study is mostly concerned with the cognitive component of subjective well-being, SWL prevails over happiness.

2.4.3 Orientations to life satisfaction

Seligman (2002) and Peterson *et al.* (2005) established the orientations to life satisfaction. In some text such as Oles and Jankowski (2017), these are considered sources of happiness while others like Anic and Tonicic (2013) take them as paths to happiness. Thus, Seligman (2002) argues that orientations to life satisfaction are a component of authentic happiness which also is considered a subset of eudaimonic theory of happiness as noted by Brey (2012). A good life according to Seligman (2002) therefore must include all three orientations, *viz*, pleasure, meaning and engagement.

a) Pleasure

Individuals get happy if they strive for pleasure. Pleasure is argued to be the main source of happiness (Oles & Jankowski, 2017). Thus, Vella-Brodrick, Park and Peterson (2009, p. 167) argue that "[t]he pleasant life involves enjoyable and positive experiences". From this perspective, it means that if one finds pleasure in their life, they tend to be happy therefore are likely to report high life satisfaction score. In the words of Sirgy (2012, p. 17), "... to be happy is to take pleasure in things ...". Therefore, positive feelings about the past, present and future life yield a pleasant life (Brey, 2012).

The understanding of happiness as pleasure can be attributed to Mill (2001). Mill (2001, p. 10) states that “[b]y happiness is intended pleasure, and the absence of pain; by unhappiness, pain, and the privation of pleasure”. Therefore, a person derives happiness from the absence of pain. In the context of the thesis, since displacement is a stressful life event it is likely to induce pain among IDPs.

b) Engagement

The sources of happiness in this aspect are the activities that one does. If one does activities that follow their intrinsic motivation, they will be happy (Oles & Jankowski, 2017). In this orientation, happiness is derived from the achievement of personal goals. According to engagement orientation to happiness, if one has generally achieved their goals in life they tend to be happier than someone who on average has failed to attain theirs. This supports the self-comparison view of the reference norm hypothesis.

In this instance, it means that from the satisfaction with life scale, one who agrees or strongly agrees with the statement, “[s]o far I have gotten the important things I want in life”, is deriving happiness from the engagement orientation. Thus, the individual will be living a good life since an engaged life is equal to a good life (Vella-Brodrick, Park & Peterson, 2009). The good life translates to satisfaction with life.

c) Meaning

According to Comert, Ozyesil and Ozguluk (2016, p. 238), “[m]eaning in life refers to a person’s concerns regarding personal existence”. Oles and Jankowski (2017) argue that this source of happiness emanates from the fact that individuals seek meaning in their life hence pursue a purposeful life. Thus, individuals who undertake activities for the greater good tend to find meaning in their lives and report to be living a happy life (Vella-Brodrick, Park & Peterson, 2009). While Vella-Brodrick, Park and Peterson (2009) perceive meaning as undertaking activities, Ventegodt, Andersen and Merrick (2003) take it as realising every opportunity and potential in one’s life. It is important to note that when one talks about potential, they are referring to capabilities as viewed by De Vriese (2006). In this instance then, an individual who

finds meaning in his or her life is usually satisfied with his or her life. Comert, Ozyesil and Ozguluk (2016) found meaning to be a significant determinant of life satisfaction.

2.4.4 Subjective Well-being Scales

Subjective well-being has been studied for decades now. However, its measurement is still not unique as revealed by several scales suggested by authorities in the area. It is, however, almost none debatable that these scales are meant to measure components of subjective well-being. Among the most common scales used in well-being, measurement is Satisfaction With Life Scale (SWLS) by Diener *et al.* (1985), Temporal Satisfaction With Life Scale (TSWLS) by Pavot, *et al.* (1998) and the Household, Income and Labour Dynamics in Australia (HILDA) Survey which is a longitudinal study managed by the Melbourne Institute at the University of Melbourne. One thing to note is that some measures are domain satisfaction measures while others are general life satisfaction measures. Van Praag and Ferreir-i-Carbonell (2008) note that usually when one is satisfied with their life domains, they are likely to be satisfied with their life as a whole, thus general life satisfaction increases. The various measures of life satisfaction, however, can be broadly classified into two groups, *viz* single-item measures and multiple-item measures as explained next.

2.4.4.1 Single Item Measures of Life Satisfaction

The group of single-item measures is made up of a plethora of scales such as the HILDA survey, European Social Values Survey (ESS), German Socio-Economic Panel Survey (GSOEP) and World Values Survey (WVS), among others. In this group, global life satisfaction is measured by a single question. One common characteristic among these questions is that they seem to measure current life satisfaction of which one common question for measuring that is, “All things considered, how satisfied are you with your life” from the HILDA survey with the response being on an 11-point scale with zero being lowest and ten reflecting highest life satisfaction. The other question that shows that single-item measures only concentrate on current life satisfaction is: "All things considered, how satisfied are you with your life as a whole these days?" from the European Social Values Survey. Again this is responded on an 11-point scale with zero indicating dissatisfied and 10 indicating satisfied. All in all, under the single-item

measures, life satisfaction is measured using a single question which considers all aspects of life in one. The only thing that differentiates the items is the wording of the questions.

Erdogan, Bauer, Truxillo and Mansfield (2012) noted one main disadvantage with single-item scales. They argued that the single-item question's place in the order of questions affects the reporting of results. If a questionnaire firstly asks about variables that are considered very important to respondents' lives before the SWL question, respondents tend to exaggerate the importance of the preceding variables. This problem was not found in the SWLS (Pavot & Diener, 1993) as an example of the multiple-item scales.

2.4.4.2 Multiple Item Measures of Life Satisfaction

These scales measure life satisfaction based on several questions that the respondent is expected to answer with the respondent's life satisfaction being then a sum of the scores from each question. The most common scales are the Satisfaction With Life Scale by Diener *et al.* (1985) and a revision of the same termed the Temporal Satisfaction With Life Scale by Pavot, Diener and Suh (1998).

a) Satisfaction With Life Scale (SWLS)

The scale is used to measure global life satisfaction as a component of wellbeing (Diener *et al.*, 1985). One thing to note is that life satisfaction is considered as a cognitive component of wellbeing on this scale. The SWLS is a 5-items scale that was psychometrically proven to hold for different groups, a characteristic that is not usually present in scales that use only one question. According to Diener *et al.* (1985), each question is scored from 1 to seven and 5 questions have to be answered giving the possible range of 5 (low satisfaction) and 35 (high satisfaction). One advantage that the scale has is that it leaves the respondent with room to weigh various domains of life and various feelings in whichever way they choose (Diener *et al.*, 1985). Additionally, Kahneman and Krueger (2006, p.7) argue that "[g]lobal life satisfaction questions have been found to correlate well with a variety of relevant measures". From these arguments, it is apparent that life satisfaction scales with multiple items play a great deal in solving problems associated with single-item questionnaires.

Sample items from the 5-items questionnaire include: '[i]f I could live my life over, I would change almost nothing' and '[i]n most ways, my life is close to my ideal'. All items are

responded on a Strongly Disagree to Strongly Agree Likert-scale type response. To determine the life satisfaction score of an individual respondent, the sum of the responses in the five questions is used. A figure between 5 and 9 inclusive (very low score) shows that the respondent is highly dissatisfied, while that of 20 to 24 shows an average score. A total between 26 and 30 inclusive indicates satisfaction with life while that of 31 to 35 inclusive means one is extremely satisfied with life. The Satisfaction With Life scale has been the most widely used scale on life satisfaction (Alghamdi, 2015).

While the standard SWLS is a seven-point response scale, it can be modified to a five-point response scale without problems. This was previously done by Schimmack *et al.* (2002) and Yip *et al.* (2007). However, there will need to transform ratings so that they fall within the typical 5-35 range of the SWLS. Without this transformation, problems of comparisons with the original and, therefore, interpretation of results become inevitable.

b) The Temporal Satisfaction With Life Scale (TSWLS)

This was propounded by Pavot, Diener and Suh (1998) when they introduced the temporal aspect so that one could measure past, present and future life satisfaction. The understanding was that a person will be happy when they are satisfied with their past, current and potential future circumstances. In this regard, life satisfaction is measured in three phases and hence this is a modification of the global life satisfaction scale introduced by Diener *et al.* (1985). Just like its predecessor, this scale is a Likert scale response format on a Strongly Disagree to Strongly Agree range and interpreted in the same way as the SWLS. Fifteen questions make up the scale with five referring to past, another five referring to present and the last five to the future and this grouping of questions were meant for comparison across the three periods. The scale proved to be highly consistent as a measure of global life satisfaction (Pavot, Diener & Suh, 1998). The first and fifth items in the TSWLS were, however, found to be problematic in the Chinese student population (Ye, 2007). This then led Ye (2007) to propose a 9-item questionnaire that ignores the first and last item in each period. There was no loss of generality with this modified version. However, the thesis used the original version as proposed by Pavot, Diener and Suh (1998).

One thing to note is that both the SWLS and the TSWLS suffer mostly from the same weaknesses. One of which is that they have strong positive statements that may lead respondents to respond positively thereby compromising the results. However, given the volume of researches using these methods which made them the most commonly used (Alghamdi, 2015), this study also applied the TSWLS as a standard scale of measurement.

c) Satisfaction with Life Index A (LSIA)

This scale is strongly associated with Fugl-Meyer *et al.* (1991). According to Boonstra *et al.* (2012) and Nilsson (2015), the Life Satisfaction Questionnaire (LiSat-9) was developed by Fugl-Meyer *et al.* (1991) and was later extended to LiSat-11 by Fugl-Meyer, Melin and Fugl-Meyer (2002). The LiSat-11 is an eleven item questionnaire that requires respondents to assess their life satisfaction. Ten items ask respondents to rate their domain-specific satisfaction while one item is on global life satisfaction (Jacobsson & Lexell, 2016). There are six-response levels in the questionnaire ranging from very dissatisfied to very satisfied. Jacobsson and Lexell (2016) found that most items in LiSat-11 and those in SWLS were correlated, especially item 1 in LiSat-11 which is meant to measure life satisfaction as a whole and the total SWLS score.

d) National Child Development Survey, UK (NCDS, UK)

On this scale, life satisfaction is rated on an 11-point scale with zero representing completely dissatisfied while 10 represents completely satisfied. Three key questions are used to measure life satisfaction. Each question relates to past, present and future. The question relating to the past refers to 5-years back and reads, "How satisfied were you with your life 5 years ago?". Current life satisfaction is measured by the question "How satisfied are you with your life?". The question that relates to future life satisfaction reads, "How satisfied do you expect to be with your life in 5 years?". Although this scale may be found to share similar advantages as the TSWLS, the TSWLS seems superior because it does not necessarily limit time-frames for determining life satisfaction. For instance, the NCDS, UK, scale may not be appropriate in the current study because some IDPs had been in Arda Transau for more than 5 years as at the time of data gathering. Therefore, the 5-years' time-frame may be too restrictive in this sense and, therefore, invalidates or limits the NCDS, UK Scale's application in this study.

2.4.5 Determinants of Life Satisfaction

Determinants of life satisfaction are many in literature but most of them revolve around the demographic and personalities of an individual. The bottom-up approach used in this study focuses much on demographic factors, external events and situations in determining one's life satisfaction (Diener *et al.*, 1999). Thus, the bottom-up approach argues that life satisfaction is a function of satisfaction with life domains (Erdogan, Bauer, Truxillo & Mansfield, 2012). Among the many determinants of satisfaction with life as espoused by the bottom-up approach are income, marital status, social capital, age, external events like life-changing events and self-reported health status, *inter alia*. This section expounds on several determinants of SWL, one by one.

a. INCOME

Income is the most prominent determinant of life satisfaction (Stutzer & Frey, 2012) though again most controversial. This variable is also considered a very complex predictor of life satisfaction (Dolan, Peasgood & White, 2008; Proto & Rustichini, 2015). The underlying question which has not been resolved so far is whether income can buy happiness or not and, therefore, the relationship between income and subjective well-being remains unresolved (Yasar, 2017), while other authors like Ferrer-i-Carbonell (2013) noted that many happiness researchers have concluded that money does not buy happiness. Most people perceive the rich to be happier than their poor counterparts, be it countries or individuals and this claim has been verified by research findings (Graham, 2005). The reason posed is that rich households or countries have more material well-being, more choices and fewer survival constraints, thereby enhancing the satisfaction of needs, hence may be considered to be happier than the poor (Sacks, Stevenson & Wolfers, 2012; Jaunky, Jeetoo & Rampersad, 2019). However, the real determinant of happiness might not be related to income. For instance, one might choose a low paying job that personally rewards them (Graham, *ibid*) thereby making them happy while a high paying job, that is more stressful, may be argued to reduce satisfaction with life. In this instance then, income is not the determinant of satisfaction with life but some other factors. Thus, income as a determinant of life satisfaction may be mediated by other variables such as personality (Proto & Rustinchini, 2015).

In Asia, Ngoo, Tey and Tan (2014) found that income is not a major determinant of life satisfaction across regions but within regions, it is a major determinant. Also, the curvilinear association between income and satisfaction with life, propounded by the needs theory, was rejected implying that income has not reached its maximum level for it to lower life satisfaction in Asia (Drakopoulos & Grimani, 2013; Ngoo, Tey & Tan, 2014). Also, in South Africa, Mafini (2017) found that income is not a statistically significant determinant of life satisfaction. Drakopoulos and Grimani (2013) found among European countries, that at low-income levels, happiness is statistically determined by income. Therefore, that income buys happiness remains controversial given the mixed findings.

Income as a determinant of happiness depends on whether one is looking at it from country comparisons or within-country comparisons (Arthaud-Day & Near, 2005). Arthaud-Day and Near (2005) noted that within countries, absolute income is weakly related to happiness while across countries absolute income becomes a stronger predictor of happiness. Absolute income is normally used as a measure of materialism, where, "... predominant theories conceptualize materialism as the belief that life satisfaction can come from acquiring possessions" (Wright & Larsen, 1993, p. 158). The conceptualisation that "... possession brings happiness..." (Gornik-Durose, 2019) possibly emanates from the utility axiom 'more is better' or the fulfilment of the needs from Maslow's hierarchy of needs (Maslow, 1943; Doyal & Gough, 1991; Tay & Diener, 2011; Drakopoulos & Grimani, 2013; Howell, Kurai & Tam, 2013). Wright and Larsen (1993) claim that the effect of materialism on life satisfaction is, however, controversial with several studies getting different signs on that relationship. In support of this assertion, Lipovcan, Prizmic-Larsen and Brkljacic (2015) noted that the associations between materialism and well-being differ according to the construct of well-being used in each study. However, Doolittle, Courtney and Jasien (2015) established that among the urban Connecticut families with children in need of special medical care, low income was not a hindrance to satisfaction with life. They found that the satisfaction with life scale score was higher than in other set-ups with more economic resources. Therefore, while it may be argued that high incomes are positively associated with SWL, low incomes can also be preferred because they may lead to higher satisfaction with life. This implies that the relationship between income and life satisfaction remains ambiguous.

An extensive literature survey by Dolan, Peasgood and White (2008) revealed that income has positive but diminishing returns to Subjective Well-being (SWB). They also showed that high well-being can also lead to high future incomes and hence reverse causality is a possibility. This means that it is unclear as to whether income determines SWB or it is SWB that determines income. Later on, Sacks, Stevenson and Wolfers (2012) carried out a cross country comparison of life satisfaction and income relationship and found out that rich countries are happier than poorer ones and that no satiation exists. However, diminishing marginal utility from each dollar income increase was found to exist thereby corroborating the findings of the survey by Dolan, Peasgood and White (2008). One tenet to explain the curvilinear relationship between income and happiness is the needs theory (Maslow, 1943; Drakopoulos & Grimani, 2013; Howell, Kurai & Tam, 2013). In the needs theory, there is an upper limit to which income can determine subjective well-being. Possibly, this is because of the fulfilment of the basic needs that income plays at its lower levels (Maslow, 1943; Drakopoulos & Grimani, 2013; Howell, Kurai & Tam, 2013). Beyond that level, income becomes irrelevant as a determinant of SWL.

It is also claimed that income change is a predominant determinant of happiness (Frijters, Haisken-DeNew & Shields, 2004a) with income growth being a potential positive determinant of SWL. Thus, the question is “When one has an income raise will their happiness increase or not?” With this question comes the Easterlin paradox which brings in this highly debatable issue. The proponents of this paradox claim that income raise will not raise average subjective well-being (Easterlin, 1974; 2001; Stutzer & Frey, 2012). The argument posed here is that income, *per se*, does not buy happiness implying that recipients of the income raise are, on the one hand, stoics who assume a “[g]ently flowing [l]ife” as noted by Drakulic (2012, p. 32). Thus, whether income is raised or not happiness will remain unchanged. On the other hand, however, at lower levels of income, the relationship between SWB and income is argued to be significant (Easterlin, 2001; Howell, Kurai & Tam, 2013; Yasar, 2017). Therefore, income will then be found to determine SWB significantly below the satiation point, thereby confirming the curvilinear relationship proposed by the needs theory.

Relative income is also argued to determine an individual’s satisfaction with life, a prediction in line with the reference norm or social comparison hypothesis. In this argument, it is argued that individuals compare themselves with those closer to them than others far away from their place

of residence (Rickardsson & Mellander, 2017), the so-called relevant others (Ferrer-i-Carbonell, 2013). Thus, from this angle, the study argues that the incomes of those individuals within the proximity of the respondent must predict the participant's life satisfaction better than that of individuals further away. This, again, is in line with the Easterlin paradox where individuals are said to be on a "hedonic treadmill" (Graham, 2005). Thus, relative income is argued to matter more to well-being than absolute income since aspirations increase with income (Easterlin, 2001; Graham, 2005; Proto & Rustichini, 2015). When one resides in an area where they are perceived to be richer in material wealth than others, their satisfaction tends to be higher also. This can be as a result of the fulfilment of certain human needs as espoused by Maslow's hierarchy of needs (Maslow, 1943; Doyal & Gough, 1991). What matters in these comparisons are the individual's colleagues rather than other reference groups (Clark & Senik, 2009), hence, individuals want to answer the question, "How do I compare with my colleagues?". However, Ferrer-i-Carbonell (2013) notes that according to the reference norm hypothesis, an equally distributed income increase will not determine satisfaction levels. In short, in as much as an increase in income may raise relative income, thereby potentially explaining SWL in line with the social comparison theory, the relationship depends on whether the raise in income has not been awarded to the comparison group as well.

In a study of the oldest-olds in China, Ng, Tey and Asadullah (2017) established that relative income is a significant determinant of life satisfaction. Earlier on Mayraz, Wagner and Schupp (2009) had found, using German-Socio Economic Panel Study, that income comparisons predict subjective well-being more in men than in women. Another line of argument, however, is that both absolute and relative incomes are important determinants of life satisfaction. Thus, Rickardsson and Mellander (2017) found that being rich and being richer than others increases the probability that one will report being satisfied with life. Therefore, from Rickardsson and Mellander (2017), one can conclude that the rich and the richer are equally happy meaning absolute and relative incomes are equally important in determining satisfaction with life.

Related to relative income is income inequality. Generally, rational individuals are inequality averse. With this in mind, Roth, Hahn and Spinath (2017) analysed the effects of inequality on life satisfaction in Germany and found that people tend to be happy in years of low inequality. Among several countries, including Latin American countries, Yasar (2017) confirmed that

inequality and SWB are negatively related. However, Yasar (2017) noted that extant literature shows that the effects of inequality on SWB are mixed. Therefore, for the case in point, if there is high-income inequality among IDPs, they are likely to report unhappiness.

Another strand of literature posits that when both relative income and absolute income increase, their effect on SWB becomes weaker. This strand claims that both relative and absolute incomes matter in explaining SWB and income relationships (Rickardsson & Mellander, 2017; Yasar, 2017). Yasar (2017), however, established that average income has a direct and mediated effect on SWB, meaning that income on its own may fail to have significant effects on SWB.

In line with engagement orientation, aspirations also play a role in the relationship between income and individual life satisfaction. Attainment of certain aspirations is sometimes deterred by the level of income one is currently earning. Those individuals with low aspirations usually report high life satisfaction at low incomes and *vice versa* (Easterlin, 2001; Proto & Rustichini, 2015). This line of thought may pose the reason why rich individuals may fail to be happy and hence the argument that income does not buy happiness. Proto and Rustichini (2015) argue that the rich usually fail to meet their aspirations while the poor do so, thus validating the proposition of the engagement orientation. Failure to meet an aspiration then can be regarded as a failure in life and this reduces one's reported level of life satisfaction. The gap between realised income and aspired income does, therefore, play a role in determining one's life satisfaction. As Proto and Rustichini (2015) argued, this gap is mediated by one's personality usually neuroticism, which is a sensibility to a negative outcome.

To crown it all, income as a determinant of subjective well-being is highly debatable. People's richness is based on material well-being, hence traditional economists use GDP and GNP as national measures of income and these economists assume that an increase in GDP or GNP will lead to improved happiness. However, the word rich is subjective and that explains the reasons why some people considered poor by society might be happier than their so-called rich counterparts. It is imperative to note that the Easterlin Paradox hinges on the fact that even if one has a high income, they may not be that happy since what matters within the social comparison theory is the relative income and not absolute income. However, being rich and being richer than others is equally of importance in determining life satisfaction. Therefore, from this perspective,

it is evident that in as much as relative income might determine life satisfaction; absolute income plays an equal role. Ferrer-i-Carbonell (2013) noted that the debate on the relationship between happiness and satisfaction with life is likely to continue without consensus.

b. SOCIAL CAPITAL

Social capital is equally argued to determine life satisfaction (Froh *et al.*, 2007; Dhurup & Surujlal, 2009; Stutzer & Frey 2012). Social capital, "... consists of those features of the social organisation ... which act as resources for individuals and facilitate collective action" (Lochner, Kawachi & Kennedy, 1999, p.260). Also, Coleman (1998, p.s98) states that "[s]ocial capital is defined by its function". Social capital is, thus, comprised of networks, trust and reciprocity and these are built from the social organisations one belongs to. Therefore, Field (2003, p. 1) summarised it as "relationships matter". Furthermore, social capital can come in two major types, *viz* structural social capital and cognitive social capital (Harpham, Grant & Thomas, 2002; Yip *et al.*, 2007). The two types have got their different proxies in literature such as group membership representing structural social capital and trust representing cognitive social capital (Harpham, Grant & Thomas, 2002). In the context of economics, social capital can be considered to be a special type of public good in the sense that it is available to each member of that particular system. Social capital reduces transactions costs relating to, say, time and effort to do anything thus improving efficiency (Cvetanovic, Despotovic & Filipovic, 2015). For instance, group members may be able to avail market information to each other at no cost.

Belonging to a certain group such as a religion or trade union has been found to increase life satisfaction. This is evident if group relations are good (Stutzer & Frey, 2012) as espoused by group dynamics in organisational behaviour. These group relations bring about another form of social capital which is relational social capital which deals mostly with the quality of connectedness. Thus, the quantity and quality of social capital may be very important in explaining life satisfaction among individuals. Findings to this effect were obtained by Froh *et al.* (2007) who established that among 207 students and 28 psychotherapy patients, interpersonal relations predicted life satisfaction in the United States of America. Among African refugees in Australia, Colic-Peisker (2009) also established that social support predicted life satisfaction more than any other factor. Alipour and Taghavaei (2016), therefore, claim that there exists a

significant positive association between social support and SWB. Internal displacees with more social support are thus likely to report high life satisfaction than those without social support. The reasoning behind the relationship between social support and predicted life satisfaction being that those who get support feel that they are not alone in that predicament, a prediction in line with the social-consensus theory. In summary, Paldam (2000) argues that “[m]ost people build trust in and networks to others and come to cooperate with them” (Paldam, 2000, p.629). Thus, trust, networks and cooperation are among the measures of social capital according to Paldam (2000). However, Field (2003) argues that trust is not a dimension of social capital but an outcome of social capital. Possibly, this is because trusting strangers generally is difficult. Again, through socialisation, trust is built, therefore, trust becomes an outcome of social capital. The debate on the causality between trust and community participation has also been taken to greater heights as already alluded to before.

Social capital as a determinant of life satisfaction was also investigated by Takahashi *et al.* (2011). Their findings using data from individuals with musculoskeletal impairments in Hanoi, Vietnam indicates that social capital, especially structural social capital represented by group membership, is a statistically significant variable. However, cognitive social capital and citizenship activities were not significant in determining life satisfaction.

c. FAMILIALISM

Related to social capital is the Familism or Familialism theory. The theory states that one puts family interests first as compared to individual interests or one refers to the family for support, comfort and services (Hernandez & Bamaca-Colbert, 2016). In the interest of the family, one may go out of their way to make the family happy. This goes hand in hand with the utilitarian moral principle that each person acts to maximise the collective happiness of everyone (Bentham, 1823; Mill, 2001). Therefore, one derives happiness from making other people happy too. According to familism theory, an individual also considers the family as a source of social support. In such instances, families with strong family ties tend to be better off because they assist each other in times of need hence will have improved life satisfaction. Thus, in the context of the current study families whose members are tightly connected or networked are assumed to be happier because of the ‘caring function of the family’ (Leitner, 2003) than those with poor

connections. The primary network for the IDP, besides the family, however, is their neighbour. Therefore, familism theory connects well with social capital.

In the context of familism again, Hernandez and Bamaca-Colbert (2016) argue that lower socioeconomic status associates well with endorsing familism values. In areas like Arda Transau, where most families believe they are of lower socio-economic status than others, it is a possibility that familism determines satisfaction with life. However, it may be argued again that familism may negatively affect satisfaction with life by way of financial obligations. When familism holds, the financial obligation of a person is likely to increase and this may reduce life satisfaction because the person concerned may strive to assist as many people as possible to make them happy. The increased burden on the budget reduces material well-being, thereby potentially reducing SWL. Therefore, familism may carry any sign with regards to satisfaction with life determination.

d. EMPLOYMENT STATUS

Employment status cannot be ruled out as a determinant of life satisfaction. Literature has it that the employed turn out to be happier than the unemployed even if the unemployed were to be given the same income or benefit as the employed (Frey & Stutzer, 2002; Stutzer & Frey, 2012). In a study among Jewish and Arab women in Israel, Biadisy-Ashkar and Peleg (2013) found out that the employed women were more satisfied with their lives than the unemployed women even though there were no cultural differences in life satisfaction among the two groups. Frey and Stutzer (2002) argue that unemployment does not only affect the unemployed person but may also affect the employed negatively. The employed may suffer because they may face higher burdens of unemployment contributions and they may also worry about the likelihood of being unemployed as well. On the one hand, both the burden of unemployment contributions and the probability of being unemployed reduce reported well-being of the employed individuals. On the other hand, the unemployed tend to report high levels of satisfaction if unemployment has hit so many people, thus there is solace in numbers. These arguments may make someone then to conclude that those internal displacees who are jobless are likely to report lower life satisfaction than their counterparts who are employed. However, one can also argue that even the employed may have low life satisfaction because of the fear of possible loss of employment or the burden

of taking care of the unemployed relatives. Therefore, the nature of the relationship between life satisfaction and employment status is controversial.

Across gender, Clark, Diener, Georgellis and Lucas (2003) investigated whether males and females equally adapt to conditions. On the one hand, they found that life satisfaction among men is more affected by labour market events such as being laid off or unemployed than women. Women, on the other hand, were found to be more affected by life events such as marriage and divorce. However, the effect of these life and labour market events was strongest at the time of the event. Therefore, given time, individuals were found to adapt to these events such that life satisfaction will return to its initial level, as predicted by the set point theory. In short, their findings indicate that the relationship between stressful life events and satisfaction with life is mediated by time meaning the adage 'time heals' is likely to hold.

Another avenue about the relationship between employment and life satisfaction is the comparison between the self-employed and the employees (Stutzer & Frey, 2012). Stutzer and Frey (2012) argued that one can accept to be self-employed because they want autonomy even though it may give them a low salary. In such an instance, autonomy will determine happiness more than employment and income. Usually, individuals who go for self-employment tend to be happier for reasons such as knowing that what they are doing is their own business and they have personal autonomy, with no one to report to and work as and when they want. From this perspective, one may argue that those who were previously self-employed before displacement is likely to report having their life satisfaction being affected negatively thereby being most likely to report low satisfaction with their life after displacement. Again employment, *per se*, may not be a good determinant of life satisfaction since satisfaction with life may depend on the quality of work done by an employed person (Hye-Kyung, 2013). In this regard, Hye-Kyung (2013) found out that, for migrants in South Korea, those women working in professional occupation were highly satisfied with life than their counterparts in other jobs.

Also, those individuals who are highly satisfied with their jobs are likely to report high levels of life satisfaction. Using Pearson correlation and hierarchical regression analyses, Alghamdi (2015) established that job and life satisfaction were significantly and positively related in Saudi Arabia. Among Bosnian refugees in Australia, job satisfaction was found to be the strongest

predictor of general life satisfaction (Colic-Peisker, 2009). From this argument, one can posit that individuals in Arda Transau, who are currently satisfied with their jobs, are most likely to report high life satisfaction. Contrary to this, if an individual, who was satisfied with their job, lost the job due to displacement, that individual is likely to report low levels of life satisfaction after displacement. On the one hand, satisfaction with one's job is explained by satisfaction with benefits accrued from the job. This suggests that life satisfaction of an employee can be viewed as depending on their employment status with that employment status affecting job satisfaction. Job satisfaction, on the other hand, is affected by satisfaction with the benefits derived from being employed. Therefore, it can be concluded that the relationship between employment status and satisfaction with life is mediated by job satisfaction and benefits accrued from the job.

Alghamdi (2015) also highlights three possible theories that explain the nature of the relationship between job satisfaction and life satisfaction. The first of these is the spillover model which proposes that being dissatisfied with one's job leads to being dissatisfied with life since one domain spills-over to the other. The opposite is also assumed to hold where those dissatisfied with their lives tend to be dissatisfied with their jobs. The spillover model, therefore, indicates a positive relationship between the two. The second theory, the compensatory model, proposes that individuals who are not satisfied with their jobs find satisfaction elsewhere, hence compensate the lost satisfaction by alternative sources. This, therefore, shows a negative relationship between life satisfaction and job satisfaction. Finally, the segmentation model claims that the two variables are independent thereby suggesting a weak or non-significant relationship between the two variables (Alghamdi, 2015). Thus, being satisfied or dissatisfied with life does not have any significant relationship with being satisfied or dissatisfied with one's job.

The discussion presented shows that employment status and SWL are related. However, the relationship is explained from various angles such as from benefits obtained from being employed, from compensatory behaviour and or from segmentation of job satisfaction and SWL.

e. CULTURE AND ETHNICITY

Culture has been found to sometimes have an effect on reported levels of life satisfaction (Schimmack *et al.*, 2002; Sabatier *et al.*, 2011; Angeline, Casi & Corazzini, 2014). Schimmack *et al.* (2002) found out that hedonic balance has more effect on life satisfaction in individualistic

cultures, for instance, the USA and Germany. Also, the effect of personality on life satisfaction was moderated by culture. Angeline, Casi and Corazzini (2014) established that using the German Socio-Economic Panel data, in Germany the more one associates with the Germany culture, the more they are satisfied with their lives. They concluded that cultural assimilation plays an important role in the life satisfaction of migrants. Hence, satisfaction with life can be argued to be culturally dependent with some cultures reporting high life satisfaction than others. Cultural orientations have been found to lead to different life satisfaction among adolescents as well (Sabatier *et al.*, 2011). Sabatier *et al.* (2011) found out that in cultures with high overall religiosity, life satisfaction is high. The intermediating factor, religiosity, played a key role in the life satisfaction of the adolescents in that study. However, in some studies, culture was found not to be correlated with life satisfaction, for instance, in a study involving Jewish and Arab women in Israel (Biadsy-Ashkar & Peleg, 2013). In the Chiadzwa case, culture may not be a significant variable since the displacees have been living in the same cultural set-up before displacement. Thus, cultural variations are not to be considered in the study.

Related to culture in determining life satisfaction is ethnicity. Using the European Social Survey 6 (ESS6), Koots-Ausmees and Realo (2016) established that belonging to an ethnic minority reduces life satisfaction among European countries. This could be explained as a result of perceived discrimination. The results also indicate that the ethnic minority group had lower health status than the ethnic majority, thus, the lower health status may be a contributing factor to low satisfaction with life. In line with the discrimination argument, internal displacees may report lower life satisfaction because they may be marginalised.

Among migrants, identification with the culture of the host group also plays a pivotal role in determining life satisfaction among the migrants. In Germany, Angelini, Casi and Corazzini (2014) established that those migrants who associated themselves with the Germany culture and speak the national language were more satisfied with life than those who did not. It is the understanding of the host country's culture that makes somebody adapt well with displacement (Colic-Peisker, 2009). Thus, assimilation into the host community's culture and norms help improve satisfaction with life among migrants. One reason behind culture similarity and life satisfaction of displacees is that once somebody finds themselves in a similar culture like theirs,

they are quick to fit in and feel at home which again can be reflected by cultural assimilation. This raises reported life satisfaction because one is less culturally discriminated against. From this perspective, however, Arda Transau residents cannot be argued to have cultural differences because all residents share the same culture from Chiadzwa except maybe with the surrounding host community. This might be a minor difference though. Given that the surrounding area is not of concern to the study, the culture variable is not really of interest in the current study.

f. GENDER AND SEXUAL ORIENTATIONS

Life satisfaction has also been found to be determined by sexual orientations with lesbians, gays and bisexual persons reporting lower levels of satisfaction with life (Powdthavee & Wooden, 2014) as compared to heterosexuals. Possibly this is due to discrimination by a society where, in some societies, these sexual orientations are not accepted. On gender, among Jewish immigrants into Israel from Western countries and the former Soviet Union, Amit (2009) established that women reported higher levels of life satisfaction than men. This was also found to hold for the old people in China (Ng, Tey & Asadullah, 2017). Ng, Tey and Asadullah (2017) also found that in Central and West Asia, males have higher life satisfaction than females, a result that is consistent with that of Rojas (2004) and Botha and Booysen (2013). Rojas (2004) found that even though observed life satisfaction differences across gender are minimal, men reported relatively high life satisfaction than women especially in most domains of life satisfaction in Mexico. On the one hand, men were found to be more satisfied with family, job and health while women, on the other hand, were more satisfied with economic domains. In the personal domain, men were found to be five per cent happier than women. In South Africa, men were found to be more satisfied with life than women (Botha & Booysen, 2013).

However, gender was argued to be an insignificant determinant of life satisfaction (Commert, Ozyesil & Ozguluk, 2016), although varying from one country to another (Ngoo, Tey & Tan, 2014). Using the LiSat-11 scale, life satisfaction was found to be gender independent among migrants (Fugl-Meyer, Melin & Fugl-Meyer, 2002), a result also found among Sri Lankan and Indian migrants in Australia (Gunasekara, Rajendran & Grant, 2014). These findings indicate that gender as a determinant of life satisfaction remains contentious with some authors finding it as a significant determinant while others find the relationship to be insignificant implying no relationship at all.

In the current study, sexual orientation is not relevant since in Zimbabwe homosexuality is not legalised. However, in line with the work of Amit (2009) and Ng, Tey and Asadullah (2017), this study took cognisance of gender which is a nominal categorical variable. However, the expected sign on the gender variable remains ambiguous given the mixed findings from the literature.

g. MARITAL STATUS

For Stutzer and Frey (2006), one of the most important institutions determining SWL is marriage. Given this significance, several avenues have been explored in as far as the relationship between life satisfaction and marital status is concerned. On the one hand, such arguments emanate from the social selection point-of-view. According to Botha and Booysen (2013), the social selection theory argues that those individuals who are satisfied with their lives tend to get and remain married than those who are not. This comes from the fact that those who are satisfied with life have more attractive personalities than those not satisfied (Botha & Booysen, 2013; Grover & Helliwell, 2019). Applying data from German, Stutzer and Frey (2006) confirmed the social selection theory by finding that those individuals who are generally happy tend to get married. On the other hand, arguments from the social causation theory presume that marital status is the cause of life satisfaction. Thus, one is expected to be happier after getting married than before being married meaning that those who are currently married are likely to be more satisfied with life than the other marital statuses. One of the possible reasons for such a relationship is homogamy, which means the tendency to "... like to marry like" (Frey, 2008, p.87) implying that people with similar traits, such as age, race and religion, tend to marry one another. Grover and Helliwell (2019) seem to confirm the social causation theory when they found that, after controlling for pre-marital subjective well-being, married individuals in the United Kingdom were still more satisfied with life than the non-married ones. Contrastingly, the set point theory posits that marriage has a short-run effect on SWL because SWL will return to its set point. Therefore, according to the setpoint theory, duration of marriage plays a key role in mediating the relationship between marital status and SWL. In the social causation theory causation runs from marital status to life satisfaction while in the social selection theory, causation is assumed to be from life satisfaction to marital status. Therefore, the two seem contradictory implying bi-directional causality if combined.

From the social selection and causation theories, life satisfaction among currently married and non-married individuals is usually different. Botha and Booysen (2013) and Ngoo, Tey and Tan (2014) established that marital status is a significant determinant of life satisfaction among South Africans and Asian countries' residents, respectively, thereby seemingly confirming the social causation theory. Therefore, married people were found to be happier than singles in Asia and South Africa. Among women in Iran, Kalantarkousheh (2014) found that married women reported higher rates of satisfaction with life than the unmarried, a result also consistent with that by Botha and Booysen (2013) in South Africa and Ngoo, Tey and Tan (2014) in a group of Asian countries. The separated, divorced and widowed ranked the least in life satisfaction. For the Asian case, the reason, according to Ngoo, Tey and Tan (*ibid*), is that Asian culture puts more emphasis on family values.

It has also been argued that marriage has a temporary effect on increasing life satisfaction. Thus, in line with the set point theory, just before or immediately after getting married, life satisfaction is expected to increase but returns to its original level (Boyce, Wood & Ferguson, 2016; Grover & Helliwell, 2019) thereby reflecting the gently flowing life. In their study, Boyce, Wood and Ferguson (2016) established that the link between marriage and life satisfaction is mediated by personality, with introverted women and extroverted men reporting high life satisfaction. However, Veenhoven (1989) noted that the intervening variables are age and income. For Veenhoven (*ibid*), the explanation comes from the fact that most of the singles and divorced are old people, therefore, the meagre income from pensions have negative impacts on SWL which has nothing to do with marital status.

Without disagreeing with the works of Boyce, Wood and Ferguson (2016), the current study claims that married individuals are likely to report higher life satisfaction in line with the social capital argument and the social causation theory. The OECD (2001) and Posel and Casale (2015) note that the primary source of social capital is the family by providing moral and financial security to the couple concerned. Therefore, the first and foremost association a married person mostly has is usually with their spouse, thereby seemingly explaining how the social causation theory explains the relationship between marital status and satisfaction with life. Thus, in as much as social capital might be measured by the number of associations one has, the spouse may be equally counted as the first friend when it comes to one's life experiences including sharing

experiences of displacement. However, Grover and Helliwell (2019) found that only those who have their spouses as their best friends will have the largest benefits from marriage and, therefore, will report higher SWL.

Also, marriage and cohabitation were found to positively affect life satisfaction in Norway (Naess, Blekesaune & Jakobsson, 2015). Naess, Blekesaune and Jakobsson (2015) found that women were as satisfied as men when married or co-habiting. Also, Frijters, Haisken-DeNew and Shields (2004b) found that marriage increased satisfaction with life among Germans after reunification. Satisfaction with one's marriage translates into satisfaction with life but the effect is sometimes reversed (Boyce, Wood & Ferguson, 2016). Based on their findings, Boyce, Wood and Ferguson (2016) argue that marriage at first has a positive effect on life satisfaction but will eventually reduce it over time thereby claiming that those couples who have been married for a relatively long period are likely to report lower life satisfaction. This possibly reflects that a satiation point is reached during the marriage which then leads to reduced SWL.

Conclusively, literature exposes mixed views on the effect of marital status on life satisfaction. On the one hand, several authors, among them, being Frijters, Haisken-DeNew and Shields (2004b), Frey (2008) and Ngoo, Tey and Tan (2014) seem inclined to the social causation theory by concurring that marriage increases satisfaction with life, while the other group, which includes Boyce, Wood and Ferguson (2016), alludes that this relationship is reversed, resting on the before marriage level of satisfaction, as the age of marriage increases. On the other hand, those aligned to the social selection theory (Botha & Booysen, 2013), with Stutzer and Frey (2006) being examples, note that those individuals who are generally satisfied with their life are likely to be married implying that marriage is a result of satisfaction with life. Also, homogamy has been indicated as a variable explaining the relationship between marital status and SWL.

h. STRESS

Stress cannot be ruled out as a determinant of well-being. It reduces somebody's subjective well-being hence satisfaction with life (Ng, Diener, Aurora & Harter, 2009). In an attempt to find the correlation between stress and subjective well-being, Ng, Diener, Aurora and Harter (2009) used the data from the Gallup World Poll and found that, at the individual level, stress hurts affective well-being. However, wealth (income) increase has also been found to affect time pressure hence

tends to increase coronary heart disease. In their findings, income showed a small positive relationship with stress which, however, was statistically significant. This confirms that those people in high-income countries are likely to experience more stress as compared to those in low-income countries, seemingly giving a conclusion that income reduces reported life satisfaction.

That stress is a mediating variable between income and SWL may be explained by the aspirations argument presented before. In the aspirations argument, it was presented that high-income earners tend to have more aspirations and they sometimes fail to attain these aspirations. Failure to attain these aspirations puts pressure on the person concerned and therefore SWL is likely to reduce.

i. PUBLIC GOODS

Public goods endowment has been identified as another determinant of life satisfaction. The reasoning is that the availability of public goods increases consumption possibilities. Bjornskov, Dreher and Fischer (2008) argue that the provision of public goods has the potential to increase future possibilities of consumption through economic prosperity. It is from this argument that the current study predicts that the provided schools and roads may be another reason why the displacees may be satisfied with their lives. The roads are superior in quality as compared to those in Chiadzwa. However, the provision of public goods can also lead to reduced welfare according to Niskanen's model which, if applied, will predict lower life satisfaction. In the Niskanen (1968) model, bureaucracies are allocatively inefficient by oversupplying the public good and X-inefficient by producing the public good inefficiently (Doller & Hamburger, 1995). So the issue of public goods cannot, therefore, be ruled out in determining life satisfaction of these displacees.

Important contributions to the link between public goods and SWL may be deduced from the Tiebout (1956) model. According to Tiebout (1956), people vote for the supply of public goods through voting with their feet. That is, if the available local public goods are not meeting their expectations and, therefore, these people's standard of living, the people are likely to migrate to another location they perceive to be better. Implied in this theory is that public goods determine

SWL because if a person is satisfied they are less likely to migrate. This again creates place attachment which will improve SWL again.

Public goods as a determinant of SWL may also be considered from the livability aspect proposed by Veenhoven (1995). Livability is a characteristic of the environment as also proposed in the Bergsonian social welfare function. Therefore, Kovacs-Györi *et al.* (2019) noted that livability is a person-environment relationship. In this case then, if an environment is characterised by several public goods, there is likely to be enhanced SWL among the IDPs. Ali, Murshed and Papyrakis (2019) also suggest a positive relationship between happiness and the availability of public goods. They also argue that rich nations tend to invest more in better institutions hence improve the provision of public goods.

Equally important in the public goods domain is safety as noted by Maslow (1943). Maslow argues that a human being is a safety-seeking organism. That is, by nature humans need to feel secure once their physiological needs have been fulfilled. In this context then, IDPs who feel secure may be expected to report being satisfied with life. Security in this study may be in terms of tenure by having title deeds to the land occupied and the general safety of individuals.

j. MACROECONOMIC VARIABLES

Another area of research that has taken the economics discipline by surprise is how macroeconomic variables, such as GDP, affect well-being. In an attempt to compare how income, proxied by GDP, and social capital predict the evolution of well-being over time, Bartolini and Sarracino (2012) established that social capital is a medium and long-term determinant of subjective well-being in about twenty-seven countries. They also established that GDP is more positively related to subjective well-being. Life expectancy as a macroeconomic variable was also found to affect life satisfaction in European Union member countries (Gataūlinas & Banceviča 2014).

Also, Di Tella, MacCulloch and Oswald (2003) found that macroeconomic variables, such as GDP, are significant determinants of happiness among Europeans and Americans. They established that happiness equations increase monotonically with national income. Di Tella, MacCulloch and Oswald (2003) also found that lagged GDP, current GDP and changes in GDP

all affect subjective well-being. Also, unemployment benefits were found to increase happiness in European welfare states.

Easterlin (1974) found contrasting results. The results from his study revealed that an increase in GDP does not necessarily improve happiness among nations. This became known as the Easterlin Paradox. The conventional expectation, by then, was that income buys happiness. Because Easterlin found contradicting results, this became a paradox.

Somehow closer to the current study are studies involving changes in status, as revealed in illness and or retirement. These studies are closer to the current study in the sense that prolonged illnesses, retirement and displacement change people's status in society through possible changes in permanent income. On the retirement aspect, Burr, Santo and Pushkar (2011), argued that adaptation to new financial and day-to-day realities take time. Thus, with this in mind, they found that subjective indicators of financial matters predict well-being among retirees. It was also established that higher openness to change leads to positive emotions.

That adaptation to change influences SWL was also found by Di Tella, MacCulloch and Oswald (2003). The three established that recessions and income growth affect SWL by adapting to the prevailing economic environment. They also concluded that in a recession people are afraid of being unemployed thereby having their subjective well-being being reduced.

k. AGE

The comparison of life satisfaction among individuals of different age groups is common among researchers. Satisfaction with life is generally argued to be higher among young and old persons. This proposition implies a U-shaped relationship between age and life satisfaction, a proposition in line with findings by Cao (2016). Cao (2016) found that life satisfaction was lowest among individuals who are about 49 years old to which Cao attributes to responsibilities which fluctuate over an individual's life cycle. Cao (2016) indicates that an individual's responsibilities increase as soon as they get a child and when the child is grown up, responsibilities reduce thereby increasing satisfaction with life due to reduced responsibilities. However, Fugl-Meyer, Melin and Fugl-Meyer (2009) failed to find a significant relationship between life satisfaction and age among migrants in Sweden, using LiSat-11. The U-shaped relationship between age and life

satisfaction was also found to be insignificant in Asian regions except in Central and West Asia by Ngoo, Tey and Tan (2014).

Other findings also contradict the U-shaped relationship between age and life satisfaction indicating that the old are less satisfied with their lives especially with domains such as family, economic and health but are satisfied with domains in the category of personal and community domains (Rojas, 2004). In Brazil, lower life satisfaction was found to be associated with more chronic diseases among the old (Pinto & Neri, 2013). Ng, Tey & Asadullah (2017) also established that self-rated health and economic status are predominant determinants of satisfaction with life among the old people in China. However, among these old individuals, it is usually other factors, especially health-related, that count than age on its own.

Unlike the predicted U-shaped relationship between SWL and age, age may be a source of dissatisfaction with life. Palmore (1999) claimed that age is the ultimate prejudice. Therefore, being an aged person might be a source of discrimination in society. Another potential source of being less satisfied with life for old people is dependency. Being dependent on the middle age might be viewed by the old as being a person not worth to live. Combining age and its associated health status may explain the reason for the old people to be less satisfied with life which contradicts the predictions of the U-shaped relationship.

With the idea that age on its own is not necessarily a determinant of satisfaction with life in mind, Othaganont *et al.* (2002) did a study among the elderly in Thailand. In their study, they used elderly people of almost the same age and found that what separates the elderly who reported being satisfied with life from those who reported being dissatisfied with life were factors such as religious activity involvement, well-planned income and expenses and good relationships with other people. The good relationship with other people noted by Othaganont *et al.* (2002) may be a good reason against ageism which leads to discrimination against the old.

I. EDUCATION

Another controversial correlate of life satisfaction is education. High levels of education in most cases have been found to lead to high life satisfaction (Rojas, 2004; Ngoo, Tey & Tan, 2014; Cao, 2016). Rojas (2004) found that life satisfaction increases with education level in Mexico. In

that study, it was found that a highly educated individual is 28 per cent more satisfied with the economic aspect of their life and 15% more satisfied with their job activities. However, this line of argument has been found to hold mostly in less developed countries (Ambrey & Flemming, 2011). Possibly, this is because of the associated literacy rates which are generally low, thereby giving the educated persons a certain social status. Contrary to the assertion of a positive relationship between SWL and education level, Colic-Peisker (2009) established that ex-Yugoslav migrants, a group that had lower education, were happier in Australia than the African and Middle Eastern group, who had relatively higher education levels. From the above, although, it may be plausible to argue that displacees who are better educated than their counterparts are likely to be satisfied with life than their less-educated neighbours, it is also possible for the opposite to hold.

Additionally, Colic-Peisker (2009) argued that education can also lead to low life satisfaction among migrants. Educated migrants with high expectations of getting better employment in host countries may report lower life satisfaction when they fail to do so. This failure to get the expected job also leads migrants to opt for lower status jobs resulting again in lower satisfaction with life. Thus, failure to attain expectations may lead to reduced satisfaction among the learned.

m. HEALTH STATUS

The health status of an individual also determines life satisfaction and is so especially for objective happiness (Ferrer-i-Carbonell, 2013) with the link between satisfaction with life and the health condition of an individual being mediated by their satisfaction with health (Gataūlinas & Banceviča, 2014). Branch-Allen and Jayachandran (2016) established that poor health among immigrants in Canada reduces satisfaction with life. The possible role of subjective health in explaining life satisfaction is through its role in the satisfaction of needs. Failure to satisfy needs in life may impact on life satisfaction. Since health is a key need in life, failure to satisfy it results in multiple failures to satisfy other needs. The legion of failures then translates to lower life satisfaction. It is also possible that the commonly reported lower life satisfaction among the elderly, who suffer from chronic illnesses, is a result of this needs concept. In a study involving masters students and graduates in Luxembourg, Karavdic and Baumann (2014) found that life satisfaction and self-rated health status were positively related. Therefore, in the current study, if

one feels that their health status has deteriorated because of displacement, they are likely to report lower life satisfaction in the post-displacement period.

Along the same line of health status, a plethora of studies have emerged that looks at life satisfaction among individuals with certain health conditions. These include individuals with Attention Deficit Hyperactivity Disorder (ADHD) symptoms (Gudjonsson *et al.*, 2009), spinal cord injury patients (Smedema & Tansey, 2015) and musculoskeletal impairments (Takahashi *et al.*, 2011). While a negative relationship was found to exist between global life satisfaction and ADHD symptoms (Gudjonsson *et al.*, 2009; Oerbeck *et al.*, 2015), the relationship between life satisfaction and core-self evaluations among individuals with spinal cord injuries was found to be mediated by various factors such as hope, autonomy and perceived health (Smedema & Tansey, 2015). Takahashi *et al.* (2011) found that social capital intermediates the relationship between SWL and health. From all these perspectives, it may be argued that individuals who attribute their health condition to displacement may report lower life satisfaction.

Faced with different health conditions, people are forced to find coping strategies. Among the chronically ill patients, Dubey and Agarwal (2007) found that the use of active coping strategies was important since it raises the patients' satisfaction with life. Thus, they argued that the type of coping strategy used by patients is important as a determinant of life satisfaction. However, active strategies were argued not to solve all problems faced by the ill person.

n. PLACE OF RESIDENCE AND HOMEOWNERSHIP

The comparison of life satisfaction among individuals residing in different areas is also common among researchers. Li *et al.* (2015) found out that about 55% and 44% of elderly urban and rural residents, respectively, in China reported satisfaction with their lives. The vast differences separating urban and rural areas in China were given as a possible reason for this finding. Financial strain, however, significantly predicted life satisfaction among the elderly people irrespective of place of residence in that study. Additionally, conditions of the home may also play a pivotal role in determining life satisfaction. Those individuals who are satisfied with their home conditions tend to report high levels of satisfaction with life (Fernandez-Portero, Alarcon & Padura, 2017). With respect to satisfaction with residence, old people were satisfied with their home, building and community in Spain (Fernandez-Portero, Alarcon & Padura, 2017). This

satisfaction with the residence was found to positively affect individual satisfaction with life among these old aged study participants.

Along with the community, aspect comes satisfaction with neighbourhood characteristics. According to Baujard (2013), Bergson proposed that environmental characteristics affect social welfare. These characteristics possibly influence what Veenhoven (1995) termed livability. In this regard Hsu, Chang and Yip (2016) found that individuals who lived in areas with high poverty and high levels of deprivation had lower life satisfaction although the relationship was not linear. Findings from that study also show that neighbourhood characteristics explain 5% or less of the variances in life satisfaction. On another note, Cao (2016) found that individuals in high-density areas of the Twin Cities reported lower life satisfaction than those in low-density suburbs. The explanation given is that in high-density areas, pollution and noise, among other ills, reduce life satisfaction. In a nutshell, one can conclude that community characteristics influence satisfaction with life. Therefore, the displaced in Arda Transau may report high life satisfaction if the characteristics of their community are better than the ones in Chiadzwa. For instance, the road network in Arda Transau is claimed to be better than in Chiadzwa, meaning better accessibility to town, thereby potentially explaining a possible higher life satisfaction score in post displacement era. However, crowdedness may lead to lower life satisfaction in that post-displacement era.

Owning a home versus renting has benefits in life satisfaction scores. Literature suggests that owning a home and residential satisfaction are related positively (Huang, Du & Yu, 2015; Hsu, Chang & Yip, 2016). In Hong Kong, Hsu, Chang and Yip (2016) found out that private homeowners have higher life satisfaction as compared to those who rent. Owning a home increases one's sense of belonging, self-esteem and also their social status and security. People with high self-esteem usually report high life satisfaction score and also once one sense belonging they are likely to report high life satisfaction as well. In this regard, given that Arda Transau residents seem not to own the houses they occupy, as revealed by the absence of title deeds the IDPs claimed to urgently need (Madebwe, Madebwe & Mavusa, 2011), this variable is likely to affect their life satisfaction. Again, given the living conditions in those homes, with some having to be combined while previously they stood as individual families, this is likely to affect the life satisfaction of the displaced.

Branch-Allen and Jayachandran (2016) established that in Canada, individuals with a greater level of neighbourhood interactions are likely to report high satisfaction with life. In their study, it was also found that those individuals who are poor and those with less social contact reported lower life satisfaction. Greater satisfaction with life was reported by females from high socio-economic status, among others.

o. MIGRATION STATUS

Migration status has also been found to determine life satisfaction with the argument that migrants usually report lower life satisfaction than non-migrants. In a study involving Angolan migrants and Portuguese, among other groups, Neto (2001) established that migrant Angolan adolescents reported lower life satisfaction than the control group, the non-migrant Portuguese adolescents. The ethnically homogenous neighbourhood also predicted life satisfaction among migrant adolescents. In a similar study, Colic-Peisker (2009) found that ex-Yugoslav migrants were more satisfied with life in Western Australia than black Africans and those from the Middle East. The findings by Colic-Peisker (2009) may have been so because the ex-Yugoslavs sample was made of older participants than others who were predominantly women. This may justify the argument that elderly individuals, as well as women, are likely to report high life satisfaction. Additionally, job satisfaction, financial satisfaction and social support were strong predictors of life satisfaction, although with varied power, among these groups. The reported lower life satisfaction by Africans was also argued to be attributed to higher expectations of employment in Australia. The Africans expected to quickly find employment; hence failure to do so resulted in them reporting low satisfaction with life.

Migration may result in a positive valuation of one's life. In this instance, a migrant might report high life satisfaction in the host nation. Among Indian and Sri Lankan migrants, Gunasekara, Rajendran and Grant (2014) established that life satisfaction was higher among migrants than the Australian normative standard life satisfaction. The main reason for such a finding was that the migrants consider Australia a safe country to live in. Additionally, the study participants had permanently relocated to Australia, hence may have reported high life satisfaction because of that move from a developing to a developed nation with better access to medical care, among others. In line with this perspective, the current study may propose that if the residents of Arda

Transau believe that there are better amenities in Arda Transau than in Chiadzwa and that they are more secure in Arda Transau than before displacement, they are likely to report high life satisfaction. However, given their outcry of high animal losses due to theft, the residents may report lower life satisfaction since high crime rate predicted low life satisfaction among Sri Lankan and Indian migrants in Australia. This line of thinking may also affect the IDPs' life satisfaction levels.

In a study involving conflict-induced internal displacees, Getanda, Papadopoulos and Evans (2015) established, using SWL scale, that life satisfaction among internal displacees is poor in Kenya (mean score of 6.82 and standard deviation of 1.5). Some of the internal displacees even indicated suicidal thoughts and fear for themselves and their children. In that study, the group that reported lowest life satisfaction was composed of old and widowed women who did not get support from friends or government. From the study by Getanda, Papadopoulos and Evans (2015), what is not clear is the classification of individuals as internal displacees. The methods section of their study refers to IDPs as does the title of the study. However, a contradiction exists between the methods and abstract with the abstract referring to data having been gathered in refugee camps. This poses questions as to whether data was gathered among IDPs or refugees.

The fear of future displacements also has an impact on life satisfaction. If one suspects that they may be displaced again in the future, they are likely to report lower life satisfaction especially because of the effects on assets and future capabilities. Because human beings are safety-seeking organisms (Maslow, 1943), absence of safety, therefore, affects SWL. In a study involving flood victims however, Van Ootegem and Verhofstadt (2016) established that life satisfaction and previous experience of flooding are not correlated. However, this experience was found to be negatively associated significantly with a lack of future capabilities in life.

2.5 Chapter Summary

From the literature reviewed in Section 2.4, one finds that life satisfaction among internal displacees is a rare area of study. Only a few studies concentrate on this avenue yet internal displacement is a contemporary issue demanding current and feasible solutions. This urgency is necessitated by SWL as the genuine wealth and therefore an important goal in life.

This chapter managed to review literature outlining the consequences of displacement, associated determinants of choice of coping strategies and SWL. It can, therefore, be concluded that the losses incurred by IDPs make the IDPs utilise coping strategies as outlined in the household triangle of assets, capabilities and activities (de Satge, Holloway, Mullins, Nchabaleng & Ward, 2002; De Vriese, 2006). Such losses like reduced incomes can be assumed to lead to or be traced to changes in economic activities. The change in income also affects material well-being of IDPs thereby potentially reducing their SWL.

Many consequences of internal displacement have been identified in literature with landlessness, joblessness, social disarticulation, marginalisation and food insecurity dominating the list. Literature also reveals that landlessness is a prominent loss and it has the most serious consequences among IDPs. Thus, loss of land has implications on income generations, food security and even self-identity among IDPs. Therefore, having their income-generating activities affected, IDPs are likely to report lower incomes after displacement than before. Since most displacees depend on land for their food supply because they are subsistent farmers, food insecurity has been mostly reported among IDPs. Therefore, having lost land, upon which income generation from economic activities depends, with income being a determinant of SWL, the link between economic consequences, economic activities and SWL among IDPs cannot be ruled out.

Of all development-induced displacements, the literature reviewed in this chapter shows that mining-induced displacement is understudied with dams being the most widely studied. It has also been shown that economics as a discipline has not been active in resettlement studies. Therefore, knowledge of resettlement from economics perspectives is still limited. Relegating studies on resettlement to other disciplines has also made existing knowledge on economic activities and SWL among IDPs from economists limited. Therefore, the thesis tried to come in as a response to the calls by Cernea (1995a; 1996a; 1999), Dwivedi (2002) and Caspary (2007), among others. Also, existing literature has mostly approached the variables used in the thesis from a different perspective, sociological and anthropological perspectives in most cases, as compared to the current study which is economics-based. For instance, landlessness was mostly used to refer to the loss of land in terms of size, in most of the previous studies, at the expense of

productivity. From this view, therefore, households may have lost land in terms of size but may have gained a small but productive land thereby boosting food security. Again, from the agricultural economics view that there is an inverse relationship between land size and productivity (Sen, 1962), farm owners may become more productive when they are given small landholdings thereby again boosting their food security. All these views have not been extensively explored by previous literature.

Again, unlike Cernea (1995a; 1997a), who focussed on equity, human rights and social justice in the IRR model (Vivoda, Owen & Kemp, 2017a), the current study is economics-based. Thus, the thesis contributes to the existing literature by adding an economics flavour to the IRR model. Therefore, the thesis can be considered to be one of its kind.

On the coping strategies aspect, most of the existing literature does not consider determinants of choice of livelihood strategies, especially among IDPs. Additionally, Bozzoli *et al.* (2011) iterated that scant literature on economic activities of the displaced exists hence the need for this study. The current study concentrates on the displaced who are assumed to stay in the new place forever. The Arda Transau residents are then expected to undertake long term strategies that will sustain their lives in the new area. Having been given arable land, it is plausible to expect that they will undertake agricultural production among other coping strategies. However, the size of the land then requires critical decision making involving making necessary rational choices among various livelihood strategies to improve livelihoods and, therefore, SWL.

General life satisfaction has been argued to depend mainly on life domains such as marital status, income, education and social capital, among others. Social capital has been found to also strongly determine life satisfaction among IDPs. From the reviewed literature, it is noted that very few studies exist which looked at life satisfaction among internal displacees. It is, therefore, the concern of the current study to consider the pleas of the IDPs using their life satisfaction levels to inform policy action.

Conclusively, scant literature exists from economics on resettlement studies. On the one hand, neoliberal economists purport that economic development can result from such development projects but they ignore the consequences. The resource curse theory, on the other hand, predicts that various welfare indicators are generally poor in resource-rich countries. Therefore,

development economists, in particular, need to pay particular attention to the development-induced displacement issue. The next chapter outlines the appropriate methods used in the thesis.

CHAPTER THREE: METHODOLOGY

3.1 Introduction

The previous chapter outlined the theoretical and empirical evidence on the economic consequences of displacement, determinants of the choice of economic activities and SWL among IDPs. The chapter also indicated the linkages among these concepts. Therefore, Chapter Two paved the way for the current chapter on methodology.

The basis of this chapter is to outline the appropriate methods of analysis. Data used in the thesis can be broadly categorised into continuous, count and categorical variables. Accordingly, appropriate methods have been justified in this chapter again as guided by the study objectives. Therefore, certain sub-sections were devised to show methods for each aspect of the thesis. The chapter is organised as follows: Section 3.2 outlines the methodology for economic consequences of mining-induced displacement, while Section 3.3 looks at the methodology for determining choices of economic activities. Section 3.4 outlines appropriate methods for determinants of SWL while Section 3.5 concludes the chapter.

3.2 Economic Consequences of Displacement

In this section, methods for economic consequences of mining-induced displacement are outlined. Special credit goes to Cernea (1995a; 1997a) for most of the variables considered here. However, Cernea (1995a; 1997a) viewed them from the anthropological view while the thesis views it from economics. Again, a case cross-over design has been used in this study to study the consequences.

3.2.1 Data

Data for the thesis was obtained through face-to-face interviews with study participants. These respondents were drawn from households displaced by the five companies, namely; Anjin, Diamond Mining Company (DMC), Jin An, Marange Resources and Mbada Diamonds. Respondents were informed that their responses were anonymous, hence there was no need to write their names or home address on the questionnaire and that the information will be treated with maximum confidentiality. This was preceded by a self-introduction by the interviewer. Following the works of Fiala (2012) and Bozzoli, Bruck and Muhumuza (2012), the interviewees

constituted mainly the household head or in the absence of the household head, the head's representative was interviewed. For ethical reasons, those interviewed had to be eighteen years of age or above, despite being a household head or their representative. Thus, before interviewing, those respondents suspected of being under the age of eighteen years were first requested to disclose their age.

The household head or their representative was assumed to know all aspects of interest in the household. Questions asked to this individual included aspects of the age of household head, the gender of household head, education level of the household head, household income (in United States dollars) before and after displacement and household assets, *inter alia*. The data collected was purely dependent on the interviewee's memory as guided by the attribution theory and Ferrer-i-Carbonell (2013)'s assertion that "[t]here is enough evidence to be confident that individuals are able and willing to provide a meaningful answer when asked...". This is because, for instance, the data for the past income is not recorded anywhere in the case of households (Risser, Kher & Htun, 2003; Hota & Suar, 2011). However, given that there was no other way to go about the research, the study proceeded with it that way since the attribution theory predicts that people are accurate in attributing each cause to the associated effects and Ferrer-i-Carbonell (2013)'s assertion that people are accurate in evaluating issues about their lives.

Information gathered from Manicaland District Administrator's office established that the population of displacees as determined by houses allocated was 930 households. To attain a 5% degree of precision, 274 households were interviewed as determined by the Krejcie and Morgan (1970) sample size determination. The study area was first stratified according to names noted above, that is, Anjin, DMC, Jin An, Mbada and Marange Resources. This is in line with stratified sampling requirements that the locations need to have some homogeneity more than the entire population and that the groups must be mutually exclusive (Sampath, 2001; Dorofeev & Grant, 2006; Heeringa, West & Berglund, 2010). The requirement of mutual exclusivity ensures that each individual belongs to one and only one stratum (Sampath, 2001; Dorofeev & Grant, 2006; Heeringa, West & Berglund, 2010). Wegner (2013) also noted that when there is heterogeneity within the population but homogeneity within strata is expected, then stratified sampling applies. Also, in line with Dorofeev and Grant (2006), who noted that geography is usually the stratifier, the thesis used that approach. Therefore, because of the group homogeneity and differences in

population sizes, stratified sampling technique was considered applicable (Sampath, 2001). Dorofeev and Grant (2006) and Lohr (2010) also noted that stratified sampling increases the precision of estimators. It also allows the proportional representation of samples. Sampath (2001), Lohr (2010) and Heeringa, West and Berglund (2010) also concur that one advantage of stratified sampling is that it allows for the flexibility of sampling designs across strata.

After stratifying the locations, systematic sampling was used to select actual study participants thereby giving rise to stratified systematic sampling. Stratified systematic random sampling used in the thesis involves the selection of the k^{th} element from each stratum. According to Sampath (2001), this type of selecting participants is termed linear systematic sampling. The value of k is calculated based on the population and the required sample as follows:

$$k = N / n \dots \dots \dots 3.1 .$$

Where N is the population size (which is 930 in this study) or in the words of Alston and Bowles (2003) and de Vaus (2002), a sampling frame and n is the sample size. In this particular case where stratified systematic sampling was used, the terms population and sample size refer to stratum population and sample size, respectively, except for the 930 and 274 which refer to the total of the five areas. The k is known as the sampling ratio (Bhattacharjee, 2012) or the constant of proportionality (Sampath, 2001) or even the sampling interval (Dorofeev & Grant, 2006).

It is also apparent to note that given the five areas, the sampling ratio was different since the population and sample size in each stratum was different. To avoid starting point bias, the starting point in each location was determined as the first house to be found as the interviewers entered each location.

Dorofeev and Grant (2006, pp. 23-24) acknowledged that "[s]ystematic sampling is random in that each member of the population has an equal chance of selection. It is not a 'simple random' process in that the selections are not made independently: a selection of the first determines the selection of all others". Several authors, however, concur that systematic sampling is a random sampling technique (Dorofeev & Grant, 2006; Lumley, 2010; Wegner, 2013). Therefore, one may be compelled to conclude that stratified systematic sampling, used in the thesis, is a random sampling technique but is not a simple random one as noted by Dorofeev and Grant (2006).

Since stratified sampling is a probability sampling technique (Alston & Bowles, 2003; de Vaus, 2002; Lohr, 2010), results can be generalised (Alston & Bowles, 2003; Dawson, 2002). In this case, however, generalisation is appropriate to the displaced in this particular area not to Zimbabwe because the selected study site may not be considered as an adequate representative sample of all of Zimbabwe’s internal displacees, but may be a considerable proportion of mining-induced displacees.

Proportionality issues were also taken into consideration in data gathering. Since area names were used as strata, each stratum was then represented by a certain proportion of the whole population. Thus, Anjin being the largest had to be proportionally represented by the largest number and DMC being the smallest had also to be represented accordingly. Table 3.1 summarises the statistics per stratum.

Table 3.1: Target number of respondents per residential area

Residential Area	Number of Respondents
Anjin	140
DMC	14
Jin An	57
Marange Resources	34
Mbada Diamonds	29
Total	274

Source: Own calculations based on data gathered from Mutare District Administrator’s office

To get an overview of the data gathered, the questionnaires were at first piloted in 2014. The findings from the pilot study were used to perfect the questionnaires which were subsequently used in the study. For the economic consequences and coping strategies studies, data collection was done with three research assistants who were trained on the questionnaire and then deployed to the research site. The researcher was also involved in the data collection process as the fourth

interviewer and also monitoring the research assistants. The questionnaires were interviewer-administered to minimise misunderstanding concepts applicable to the thesis.

3.2.2 Research instruments and their contents

Data used in the thesis was gathered using interviewer-administered questionnaires. The questionnaires could be filled in by the respondent or interviewer depending on the respondent's choice. However, if the respondent filled the questionnaire, they did that in the presence of the interviewer. Administering questionnaires by interviewers helped the interviewees to understand the questionnaire in the same manner as the researcher. This was meant again to maximise response rate and improve the reliability of data gathered (Saunders, Lewis & Thornhill, 2012).

Demographic data was first gathered before proceeding to the other sections of the questionnaire which concentrated on the consequences of internal displacement, economic activities and SWL. The first part of the questionnaires concentrated on demographics of the household head that is, their age, gender, marital status, religion and even their current education level, among other variables. The second and third parts, as the case may be, would then enquire about the respective issues.

3.2.3 Economic Consequences of Displacement Variables

For economic consequences of mining-induced displacement, variables were borrowed from Cernea's (1995a; 1997a) impoverishment risks and reconstruction model. These are joblessness (employment status), landlessness, marginalisation, food insecurity, social disarticulation and access to common property. These were analysed by comparing pre-and post-displacement periods to get an understanding of the economic consequences of displacement on each of the variables. In addition to the variables borrowed from Cernea (1997a), certain variables were included such as distance to amenities and animals owned. Distance to social amenities could be treated similarly with access to community services as in the IRR model.

3.2.3.1 Employment status (Joblessness)

Cernea (1997a) and Barbelet (2017) noted that displacement leads to people losing their jobs, both formal and informal. In this thesis, the employment status of the displacees was used as a proxy for joblessness. Both pre-and post-displacement employment statuses were recorded as categorical variables with categories specified as employed or not employed. The employed

category was further broken down into three categories as permanent, temporary and self-employed. So employment status was measured as a categorical variable with categories being permanent, temporary, self-employed and not employed and was coded as 1, 2, 3 and 4, respectively. Respondents were requested to tick the category in which the household head belongs. Change of employment status from being employed (1-3) to being unemployed (4), attributed to displacement, was regarded as joblessness. However, other change-overs such as from permanent to self-employed were noted but not analysed. Although there may be psychological issues associated with moving from being permanently employed to being self-employed, this was not taken to be so in this study because the thesis was mostly concerned with the economic variable of being currently employed or not.

3.2.3.2 Landlessness

In Kenya, Mburugu (1994) noted that households lost land after being displaced by Kiambere hydropower project. In Zimbabwe, Oucho (2005) and Sachikonye (2003b) noted landless among displacees. Also, Cagoco-Guiam (2013) found that in Philippines, conflict-induced displacement led to landlessness. In this study, landlessness as an economic variable was measured in two ways. The first category referred to the size of land owned before and after displacement. A question comparing the size of land owned was asked and respondents had to answer in terms of whether the land they now own is larger, the same or smaller than the one they owned before displacement. In an instance where someone was not sure of the comparative, it was interpreted as meaning the land size is the same. The second question referred to land fertility. The argument the thesis puts forward is that land fertility is key for the productivity of displacees since it enhances food security of the household. The question used to measure land productivity read “The land that we had before displacement was more productive than the one we now have”. The participants were expected to choose between yes, no and not sure. Conclusively, a household was argued to be landless when they either had a smaller piece of land or a less productive land owned or both. However, further considerations were made in situations where an individual indicates that their land in Arda Transau was more productive but was smaller in size than the one they had in Chiadzwa.

3.2.3.4 Food Security

Food security in this study implies availability and physical access to food at all times by each household member. Thus, failure to meet this criterion implies that the household is considered food insecure. This variable was adopted from the food security questionnaire but modified to suit the current study. Three questions were asked to the respondents all boiling down to food security or insecurity. The first question on this variable referred to eating less than the family felt they should eat (reducing size of the meal) termed limiting meal portion size (Maxwell, 1996) implying lack of physical access to food. This question referred to before and after displacement periods. If the family was now eating less than they felt they should eat, this was interpreted as a food-insecure family. However, if the family also ate less than they felt they should before displacement, then food insecurity could not be attributed to internal displacement. To circumvent such a problem, there was a need to ask a second question which complements the first.

The second question referred to anxiety about food adequacy being a proxy for the availability of food. The respondent was asked to state whether the family worried about whether it would have enough food or not. If there was a worry, this indicates anxiety and hence food insecurity. This was responded to on a *yes* or *no* scale. Finally, the respondent was asked to indicate whether they were ever hungry but did not eat because there was no money to buy food in the past 12 months. The responses to this question were again categorical and were *yes*, *no* and *not sure*. This again represents the physical accessibility problem of food insecurity.

A household which suffered from each one of the above consequences was considered food insecure, in one way or another. However, the severity of the food insecurity depended much on how many of the above a household suffers from. A household facing all the three was classified as severely food insecure while the one with only two was considered moderately food insecure. Those households which faced only one of the three were considered food insecure.

Food insecurity as a consequence of displacement was found by Carrillo (2009) in Colombia. Also Acharya (2009) established food insecurity among Mexican displacees. Therefore food insecurity is a potential risk among IDPs in Arda Transau.

3.2.3.5 Access to Common Property Resources

The World Bank (2012) states that common property resources include, but are not limited to, common grazing land, firewood and common forestry. This variable was therefore, measured using three questions all on a yes (1), not sure (2) and no (3) scale. Two questions related to access to common grazing and forested land each. The respondent was supposed to indicate whether or not displacement affected their access to common grazing land and or forested lands for household uses such as firewood. On the grazing land variable, a follow-up question referred to perceptions on quality of grazing land. Respondents were supposed to indicate whether the quality of grazing land is better, in their own opinion, in post-displacement area than in the pre-displacement area. The question intended to again establish the likelihood of regaining livestock.

3.2.3.6 Marginalisation

Marginalisation may be a very significant consequence of displacement. For instance, women IDPs in Afghanistan were isolated (Majidi and Hennion; 2014). Marginalisation was measured using four questions with some referring to pre-displacement and others to post-displacement periods. All the questions, however, were on a *no*, *yes* and *not sure* scale, thus, showing that categorical data was gathered. Some of the questions referred to being denied credit within a year before and after displacement while others referred to supplies being cut because of the possibility of being displaced.

On the interpretation, a household was argued to be marginalised in one or several ways stated above. Being denied credit is an example of a situation where one would be classified as marginalised. Credit enhances income and increases personal consumption, so being denied credit because of being a potential displacee is regarded as marginalisation in the pre-displacement era. Should a person be denied credit after displacement, this was also considered as marginalisation.

Displacement poses dangers such as supply cuts. Suppliers may cut their supplies to people that are under the risk of being displaced. This is meant to guard against having inventory that is not sold when the people are finally displaced. In this study, displacees were categorised as either sellers or buyers of goods. The respondents were expected to indicate whether they were denied

supplies of goods they wanted for resale or consumption. Being denied this access was considered a sign of marginalisation.

3.2.3.7 Income

Income in the thesis is defined as total income from any source, be it earned or retirement benefits (Moreira & Padrao, 2004). It was measured as an ordered variable where respondents were asked to indicate the category in which their total monthly income lies of which the categories were four all in all. These ranges were $< US\$100$, $US\$100 - US\200 , $US\$201 - US\300 and $> US\$300$. This data was then re-coded as 1 for less than US\$100 up to four for more than US\$300, in that order. The income ranges used were determined from the pilot survey as well as the poverty datum line data from ZimStats (2013) and ZimStats (2016). Poverty datum line for Manicaland Province, in which Arda Transau is found, was US\$71.7 with Zimbabwe's national average of US\$76.7 (ZimStats, 2013). These poverty statistics were used to derive the May and June 2016 poverty datum line of US\$90. The study, therefore, used the conservative figure of less than US\$100 as the minimum with anyone earning an income less than US\$100 is deemed poor.

For income comparison during the pre- and post-displacement periods, respondents were asked to compare their incomes during the two periods and record it on a scale of less than before, the same as before and more than before, thus giving an ordered variable with three levels. These were then coded accordingly.

3.2.3.8 Savings

Savings in this study was defined as an income (as defined above) which is not consumed over and above that earned. Participants were asked to compare their state of savings between the two periods. The relevant question asked was phrased as follows: "Indicate your state of savings after displacement". Responses were savings: Increased, remained the same or reduced. From these responses, it entails that ordinal categorical data was gathered.

3.2.3.9 Animal Ownership and Distance to Amenities

Animals are an indicator of income and their disposal indicates well-being (Ellis, 1998). Therefore loss of animals due to displacement is tantamount to loss of well-being. In this thesis, the two variables were recorded as count and continuous variables, respectively. The number of animals owned before and after displacement was recorded just like distance travelled to a certain social amenity. The null hypothesis tested is that animal ownership does not change due to displacement against the alternative hypothesis that displacement reduces the number of animals owned. For displacement to have negatively affected IDPs, the number of animals owned before displacement must outweigh the one after displacement.

3.2.4 Data Analysis Procedures

In this study, the variables considered as economic variables influenced by displacement are those identified in Section 3.2.3. They, therefore, collectively sum up to the economic consequences of displacement. The study argues that if one has faced at least one of the economic variables identified in Section 3.2.3 that person has been affected negatively by internal displacement. The extent, however, depends on the number of consequences one faces.

To determine whether to use parametric or non-parametric tests on continuous and count variables, a normality test was performed. The thesis assumed that if data on these variables were normally distributed, paired t-test was to be used but if normality was absent, the Wilcoxon matched-pairs signed-ranks test would be applied to analyse the association between displacement and the various count and continuous variables, *viz*, animal ownership and distance travelled to certain amenities, before and after displacement. The number of animals households owned and several kilometres travelled to various amenities before and after displacement was found, the mean differences calculated and then the equality among mean differences were then statistically tested.

The data analysed were matched paired data, meaning that each pre-displacement observation had a corresponding post-displacement observation. Given this nature of the data, a case-crossover design was deemed appropriate. The case-crossover design, as used in this study, was borrowed from epidemiology. In a case-crossover design, unlike in the case-control approach,

study participants act as their control and exposure groups (Maclure, 1991; Petridou *et al.*, 1998; Lombardi, 2010). Maclure and Mittleman (2000, p.196) noted that although the case-crossover design may be used to study transient exposure, "... the measured exposure variable need not be transient..." and that the crossover can be gradual, reversible or irreversible. In like manner, Redelmeier and Tibshirani (1997) used the case-crossover design to study the association of cell-phone usage and vehicle collision in which they requested drivers to recall their experiences on both days before and after the collision. Therefore, based on these arguments in favour of case-crossover design and the nature of the study, the case-crossover design was considered appropriate given that the IDPs could provide answers for both pre- and post-displacement questions. Also, the design was found applicable because the thesis intended to find out how the changes in the variables of interest could be attributed to displacement. The other key advantage of the case-crossover approach is that it is applicable in cases where the choice of the control group is not straightforward and it adjusts to confounding (Maclure, 1991). For example, in studies on IDPs, the choice of the control group is debatable. Therefore, the best design is one which takes cases as their control as was done in the thesis. Maclure (1991) also noted that the case-crossover design results in a McNemar's estimate hence the use of the McNemar's test and, in some cases, its extension, the Stuart-Maxwell test in the thesis. McNemar's test enables one to calculate the relative risk of one being exposed to the exposure variable which is displacement in this case.

McNemar's (1947) test uses dichotomous variables in the analysis to determine the significance of concordance between observations before and after an incidence such as displacement. For cases where there are more than two responses, for instance, employment status, McNemar's test falls short. To solve that inadequacy, the study applied the McNemar's test extension after the works of Stuart (1955) and Maxwell (1970), well-known as the generalised McNemar's test or the Stuart-Maxwell test which is a test of marginal homogeneity. One must note that various extensions of McNemar's work have been undertaken besides the one by Stuart (1955) and Maxwell (1970). Among the many, Cochran (1954) did work on the extension but the extension was on the number of samples while the Stuart-Maxwell test is on the number of responses. That is, Cochran extended the Chi-Squared test to more than two dependent samples (Sheskin, 2000). It, therefore, implies that in the current study, the Stuart-Maxwell approach is the one applicable.

Since the study involved a large sample, the study also invoked the use of the Stuart-Maxwell test which yields the same results as the Bhapkar's test in cases where large samples are involved.

One of the many economic variables affected by displacement is income. For this thesis, income was defined as total income from any source, be it earned or retirement benefits as it is also defined by Moreira and Padrao (2004). On income comparison, when a household's income is less than, equal to or outweighs that it earned before displacement this was awarded a value of one, two and three, respectively. From this, one can note that the variable is categorical. The assignment of categories is summarised as in Table 3.2.

Table 3.2: Income comparison coding

Income category	Code	Meaning
$Y_1 < Y_0$	1	Current income is less than pre-displacement period income
$Y_1 = Y_0$	2	Current income is the same as pre-displacement period income
$Y_1 > Y_0$	3	Current income is more than pre-displacement period income

Where Y represents income and the subscripts zero and one denote time representing pre- and post-displacement, respectively.

An income value higher than the one earned before displacement implies that the household has been partly rehabilitated because that household can afford to purchase more items than it did before displacement while that below the previously earned indicates that displacement made the household worse off, *ceteris paribus*. The effects of displacement on income were then analysed using the sign test since one of the objectives of the thesis was to determine whether there was a change in income between the pre-and post-displacement periods.

To test the possibility of gender differential effects of displacement on income, a chi-square test of significance was used. This involved the use of contingent tables to test the differences between the effects of displacement on female- and male-headed families' incomes among others. The intention was to find out if these effects vary across gender. Thus, the unit of analysis, in this case, was the gender of the household head.

3.3. Economic Activities among IDPs

The methodology for the analysis of economic consequences was presented in the previous section. The current section now presents the method for analysis of economic activities after one has suffered these consequences.

Given that the displacees in Arda Transau were allocated one hectare of agricultural land, it can be hypothesised that the majority of economic activities undertaken is assumed to be agriculture. This land was meant to rehabilitate the displaced people through income from agricultural production. Some methods used in the data collection are outlined in this section with special focus on the research instrument and data analysis procedures.

3.3.1 Data

Data was gathered using the same methods as in Section 3.2 of the thesis. The same sampling techniques were also used with the same sample size and sampling ratio.

3.3.2 Research Instruments

Data was gathered using stratified random sampling as in Section 3.2. A sample of 274 participants was selected based on a population of 930 households. Questions asked to participants involve those relating to their demography and particular economic activities undertaken by households both before and after displacement. For agricultural diversification, three options were given to respondents to choose and these choices were guided by the various economic activities undertaken by households in Zimbabwe, for instance, food crop cultivation being the dominant (Bird, Shepherd, Scott & Butaumocho, 2002), cash crop cultivation and livestock rearing. Agricultural diversification is sometimes defined as "... the increasing allocation of household resources to the production of non-staples relative to food staples ..." (Dzanku & Sarpong, 2011, p.189). In this study, however, it is defined as the number of

agricultural activities undertaken as perceived from the horizontal diversification context. Thus, in line with this argument, Dzanku and Sarpong (2011) alternatively define agricultural diversification as implying "... increased cultivation or the adoption of cash crops" (Dzanku & Sarpong, 2011, p.192). Furthermore, Joshi and Maharjan (2007) and Dzanku and Sarpong (2011) noted that food self-sufficiency is important in attaining food security. Therefore, the extent of agricultural diversification may be a useful method to attain food self-sufficiency and therefore food security.

Two key questions were also asked relating to major economic activities undertaken by households before and after displacement. This set of questions guided this study as to whether that activity can be considered as a coping strategy or not. Again this is in line with the observation made by Bozzoli, Bruck and Muhumuza (2011) that the data on activity choices must reflect what was done before displacement. To establish whether these activities can safely be considered coping strategies, the Stuart-Maxwell test was used.

For agricultural activities, it was noted that most IDPs may practice more than one strategy such that there was a need for study participants to choose as many options (from the given list) as they use. To this end, the question allowed farmers to indicate even more than one activity used, therefore, allowing this study to determine if ever there is livelihood diversification from agricultural activities perspective borrowing from horizontal diversification concept. Added to this was the analysis of other economic activities undertaken by IDPs other than agricultural-related ones. Frequency tables were used to determine the approach mostly used and the level of diversification.

3.3.3 Model Specification

Discrete response models with more than two outcomes come in two main forms, one with ordered responses and the other with unordered responses (Wooldridge, 2010; Long and Freese, 2016;). The choice of which model to use then depends on whether the dependent variable has natural ordering or not. If there is natural ordering then ordered logit may be used while if no natural ordering exists the multinomial logit may be considered for use.

For unordered response models, some choice models also exist in literature among them being conditional logit and multinomial logit. The main difference between these two models lies in the attributes considered. For instance, on the one hand, the conditional logit considers attributes of the choice, that is, the choice is a function of the characteristics of the alternatives (Hoffman and Duncan, 1988). On the other hand, the multinomial logit is used when the characteristics of the chooser determines the choice. Alternatively, Hoffmand and Duncan (1988) argue that the multinomial logit focuses on the individual as the unit of analysis while conditional logit focuses on the set of alternaives for each individual. Since this study is basically on the household as a unit of analysis, the multinomial logit becomes relevant in line with the arguments made by Hoffmand and Duncan (1988).

The choice of a coping strategy depends on specific household characteristics (Rashid *et al.*, 2006). Therefore, following the works of Bruck and Danzer (2007) and Deressa, Ringler and Hassan (2010), the study used a multinomial logit (MNL) model to analyse the determinants of choice of the main economic activities among households since the MNL is a characteristic of the chooser model. This model choice was determined by the characteristics of data gathered and in line with similar researches previously done, for instance, the aforementioned two studies as well as the justification given before. As far back as 1984, Hausman and McFadden (1984) indicated that the multinomial logit model is the most commonly used among discrete choice models.

One of the most restrictive assumptions, though not always plausible, of the MNL is the Independence of Irrelevant Alternatives (IIA) assumption. Credit goes to Arrow (1948) for the independence of irrelevant alternatives assumption. The IIA suggests independence between dependent variable choices because the attributes of these variables do not count in choice making. Alternatively, this assumption states that increasing the number of alternatives available to the choice-maker does not change their odds of making their choice (Arrow, 1948; Dow & Endersby, 2004; Jones, 2005). Thus, using the example of consumers, Baltas and Doyle (2001) states that "... the odds of the consumer choosing j over k remains the same regardless of the composition of the choice set" (Baltas & Doyle, 2001, p.116). While it is an important assumption, Dow and Endersby (2004) argue that this IIA "... is a logical property of decision-making, not a statistical property such as consistency" (Dow & Endersby, 2004, p.112). The two

are simply saying the importance of IIA must not be exaggerated. They go on to argue that even if IIA is violated estimations may be made in logit form which yields consistent results. Although the above illustrates that IIA may not be a sufficient condition for MNL, this study tested for this IIA because its violation results in inconsistency in estimated parameters and biased forecasts.

To verify the independence of irrelevant alternatives, the Hausman type IIA test was used, the same as was done by Bruck and Danzer (2007) in Mozambique. However, a suest-based Hausman type IIA test was used in this study instead of the ordinary Hausman test or the Small-Hsiao test. The preference for the suest-based Hausman type over the two alternative tests is because both the Hausman and Small-Hsiao IIA tests depend mostly on the choice of base category while the suest-based Hausman type does not. Therefore, the findings of studies using Hausman and Small-Hsiao tests depend on the choice of the base category with these results changing when the base category is changed.

Since Zimbabwe is an agrarian economy, one would expect that the displaced are mainly into agriculture as an economic activity first to feed their families. However, which agricultural activity is undertaken as a coping strategy differs with individual characteristics. This, therefore, paves the way for the application of ordered logit model where agricultural activity as a dependent variable was divided into three categories, *viz*, food crop cultivation, cash crop cultivation and livestock production, of which respondents were required to indicate as many as they engage in with a maximum of three and minimum of zero. The choice of the three was motivated by the works of Bird *et al.* (2002) who established that farming communities, especially in arid regions in Zimbabwe, sometimes use the income from agriculture (cash crops) or sale of non-cash crops as coping mechanisms. The third option was derived from the view that in Chiadzwa these households used to sell animals to sustain themselves in times of need. This livelihood diversification is not unique to Zimbabwe alone since Motsholapheko *et al.* (2012) also found that to apply to displacees in the Okavango Delta of Botswana. The extent of agricultural diversification, in the thesis, was determined by several activities undertaken. A household that undertakes all the three activities was considered well-diversified and was assigned a value of three, while one with only two was assigned a value of two and lastly a household doing only one agricultural activity was assigned one. For non-farmers, the code was

zero. The binary logistic approach was applied to find determinants of other economic activities other than the major economic activity and agricultural diversification whose analysis was based on multinomial and ordered logit regression models, respectively.

The multinomial logit (MNL) model applied in this study is derived in the context of choice models based on economic theories of utility maximisation. In a case where a displaced individual household has to choose among various coping strategies or economic activities like employment and petty trading, among others, one can assume the individual household *i*'s utility for economic activity *j*, to be a function of both the attributes of the individual household and the activity itself (Maddala, 1993) and a stochastic error term. In that case, then the conditional logit model as propounded by McFadden is applicable (Maddala, 1993). However, in this study, the focus is on household characteristics as determinants of choice, therefore, giving rise to a multinomial logit or multiple logit models (Miller, 1999). The multinomial logit model, a variant of the choice models for utility maximisation, for the individual IDP is then specified as follows:

$$U_{ij} = \beta^* X_{ij} + \alpha_j^* Z_i + \epsilon_{ij} \dots\dots\dots 3.2$$

Where U_{ij} is household *i*'s utility derived from economic activity *j*, X_{ij} is a vector of attributes of economic activity *j* as perceived by household *i*. Z_i is a vector of the individual household characteristics, usually proxied by household head's characteristics. β^* and α^* are the respective coefficients to be estimated.

The Additive Random Utility Model variant of equation 3.2 shows that from an *m*-choice model, the utility of the *j*th choice (U_j) is specified as follows:

$$U_j = V_j + \epsilon_{ij} \dots\dots\dots 3.3 \quad \text{Where: } j = 1, 2, 3, \dots, m \quad (\text{Cameron \& Trivedi,}$$

2005, p. 504) "Where V_j and ϵ_j are deterministic and random components of utility" (Baltas & Doyle, 2001, p.116), respectively. The rational individual chooses an alternative that yields the highest utility since utility maximisation is assumed within the context of household choice models.

Now based on the argument that the choice of a coping strategy depends on the individual household characteristics, the study employs the multinomial logit model, which is alternatively

termed ‘the characteristics of the chooser model’ (Hossain, 2001; Jones, 2005). The reason for ignoring the effects of attributes of the economic activity on choice was motivated by the fact that these activity attributes do not usually vary across individual households (Miller, 1999) and that the choice of a coping strategy by a household depends on specific household characteristics (Rashid *et al.*, 2006). Thus, the only determinants of choice are the characteristics of the individual household which, however, do not vary across alternatives but enter the equation only in such a way as to create differences in utility over the available choices. From this reasoning, equation 3.3 can be restated in such a way as to capture the characteristics of the decision-maker as is specified in equation 3.4.

$$S_i = \alpha + \beta\chi_i \dots\dots\dots 3.4$$

On the one hand, the left-hand side (LHS) of equation 3.4 is a polychotomous nominal variable showing whether a certain coping strategy was employed by household *i*. On the other hand, the RHS shows the household demographic characteristics such as family size, household head’s age and education and gender of household head, among other characteristics, as captured by X_i . Of note is that the response variable is nominal, that is, unordered. Of note also is that MNL models require that one of the chosen categories be considered as the base category against which all others are compared (Chatterjee & Hadi, 2006; Kleinbaum & Klein, 2010). Again, one has to evaluate the probability of one alternative against another where the two alternatives are not the same, thus finding out how a change in one characteristic affects the response probability (Perez-Tuglia, 2009). Importantly, it has to be noted that an MNL model is a set of separate binary logit models, hence the alternative name multiple logit model, with each independent variable having a different coefficient as the choices vary.

In this study, the data gathered for the main economic activity engaged in by a household was screened into five main groups. Each activity could fall into one of these main activities *viz.*, employment (self or otherwise), petty-trading (for example, firewood trading, among others), farming, asset disposal and any other activities besides the four identified. All these variables were derived from existing literature on coping strategies among the displaced such as asset disposal (Horn; 2009), petty-trading and informal market activities (Sachikonye, 2005; Adam, 2008; Bozzoli, *et al.*, 2011; Bello *et al.*, 2014) and farming (Bruck, 2004; Bruck & Danzer, 2007;

International Organization for Migration, 2018). Also, Horn (*ibid*) noted that employment or work and asset disposals were used as coping strategies among IDPs in Uganda. Therefore, employment was coded as one (1), petty-trading as two (2), farming as three (3), asset disposal as four (4) and other activities as five (5). The fifth category, also derived from Bozzoli, *et al.* (2011) was meant to capture the possibility of any other activity other than the specified ones. Because there is no natural ordering, this creates an unordered polychotomous variable with 5 levels which creates fertile grounds for use of MNL models.

Agricultural livelihood diversification in this study was defined as engaging in more than one agricultural activity. Diversification of activities is important because it leads to “... meeting household consumption needs, for generating additional income ...” (Motsholapheko *et al*, 2012, p. 42). Agricultural activities were classified into three groups namely, food crop production, cash crop production and animal rearing. The number of agricultural activities undertaken was recorded meaning that an ordered categorical variable was created. The more the number of activities undertaken, the more diversified a household was considered to be. With this nature of data, ordered logit (OLogit) model was considered appropriate. Its specification, however, is analogous to the one for MNL except that the dependent variable is no longer nominal but ordered.

To find the determinants of other economic activities undertaken by the household other than the major one, the study employed various binary logit models with the same household characteristics but different dependent variables. Such dependent variables include asset disposal and renting fields, among others. The analyses were done using Stata since Stata is well suited for this type of study. Added to this is its user-friendliness.

3.3.4 Determinants of Choice of Coping Strategies

To establish the various economic activities undertaken by household, the author carried out a pilot survey in 2014 and established that the IDPs use agricultural activities, exchange goods for other goods while some engage in farming fields given to them by the host community residents, a form of plot diversification through renting a farm/plot. All economic activities engaged by these families are outlined in Section 3.3.5 of this thesis. Some households sometimes engage in more than one coping strategy, for instance, petty-trading and diversifying their agricultural

activities. The choice of these coping mechanisms is however dependent on household characteristics. Chambers and Conway (1991, p.6), however, state that "[m]any livelihoods are largely predetermined by accident of birth". Thus, some livelihood determinants may be determined from the day that a person was born. Implied in the statement by Chambers and Conway (*ibid*) is that males and females employ different livelihood activities. Based on the literature reviewed, several characteristics of households have been identified as being possible determinants of the choice of a particular activity. In this section of the study, these variables are outlined and justified. Among the variables explained are household head's age, marital status, gender and religion, *inter alia*.

3.3.4.1 Household Head's Age

As the age of the household head increases, the motive to adapt to change reduces thereby limiting their probability of choice of new economic activity. Thus, from the elderly IDPs perspective, they may try by every means possible to transfer the economic activities they used in Chiadzwa to Arda Transau. To this effect, Mulinya (2017) found a negative correlation between age of farmer and adaptation strategies to climate change in Kenya. Among C.A.R refugees in Cameroon, Barbelet (2017) noted that the elderly migrants could not engage in new economic activities because they thought their age was a limiting factor. Similarly, Spence, Lachlan and Burke (2007) found the elderly to use passive coping strategies more than active ones. With all these in mind, this study assumes that as the age of household increases, the probability of engaging in new economic activities reduces. It is also assumed that as household head's age increases, the probability of renting a farm or even plot diversification and that of working in other people's fields (selling labour) reduces but that of livestock disposal is likely to increase thereby reducing the IDPs' range of choices available for economic activities. This is so because the two activities, renting a farm and selling labour, require more manual labour and can only be engaged in by active members of the family. However, the disposal of animals may increase as the age of the respondent increases. Along this line of reasoning, Hegelson, Dietz and Hochrainer-Stigler (2013) found that households headed by older members were more likely to sell livestock as a coping strategy. They argued that older members of the households, who usually will now be earning lower incomes as predicted by the life cycle hypothesis, are more

risky borrowers than young ones hence could not access lines of credit. As a result, older household heads are more likely to resort to livestock sales as a coping strategy.

On diversification among rural women in the Oyo state of Nigeria, Adeniyi, Daud, Amao and Omotayo (2016) found that age was an insignificant determinant of livelihood diversification just like Spence, Lachlan and Burke (2007) in the USA among IDPs displaced by Hurricane Katrina. Spence, Lachlan and Burke (2007) also highlight the possibility of differences between coping strategies attributed to age difference when they state that older people may feel they have no control over events, hence may take passive approaches compared to young ones who take active approaches to cope with stressful life events.

3.3.4.2 Gender of Household Head

Most decisions, such as those regarding what to grow and at what time, in Africa are relegated to men (Mulinya, 2017). In this assertion, agricultural coping decisions are a preserve of the males. Also, since women are more risk-averse than men (Borghans, Golsteyn, Heckmen & Meijers, 2009; Nelson, 2012), female IDPs are more likely to engage in more familiar coping strategies than their male counterparts because risk-taking is usually considered a preserve of men. Thus, female-headed households are likely to engage in activities that they used to do in Chiadzwa than engage in new ones. With such a presumption, women are more likely to engage in agriculture and petty trading activities since these women IDPs in Arda Transau are familiar with those activities from Chiadzwa's experience. Again, empirical findings by Dolan (2004) indicate that livelihood activities differ between male and female-headed households. Also, Renner and Salem (2009) and Spence, Lachlan and Burke (2007) found that males and females employ different coping strategies, a conclusion similar to that by Chambers and Conway (1991).

3.3.4.3 Marital Status

Marital status of the household head has been noted to affect individuals' risk aversion with married individuals being more risk-averse than the non-married ones (Roussanov & Savor, 2014). Roussanov and Savor (2014) noted that usually unmarried individuals are more ambitious hence may tend to be more risk-tolerant. Among women, being married is statistically negatively related to household livelihood diversification (Adeniyi *et al.*, 2016), thereby confirming the

claim by Roussanov and Savor (2014). Therefore, married individuals have a lower probability of having better livelihoods because they take less risk since the adage 'no pain no gain' may hold. On the one hand, such arguments may emanate from the fact that married individuals may engage in what they consider to be safer (from prior experiences) activities than those done by their non-married counterparts. On the other hand, married individuals may be assumed to be more diversified since the couples share ideas as to what to engage in. Also, Martinoty (2015) iterates that marriage is a form of risk diversification, so married individuals are likely to be more diversified than non-married household heads. Therefore, in Arda Transau, one would expect married household heads to be more diversified than their non-married counterparts.

3.3.4.4 Household Size

According to Mulinya (2017), family size plays a pivotal role in determining strategies to use to adapt. The author argued that large family sizes may strain family resources thereby hindering adaptation to change. To this end, the study by Mulinya (2017) found that family size is negatively correlated with adaptation to climate change. Along this line, the current study assumes that large households are likely to venture into familiar territories, that is, use activities that they were using in Chiadzwa. With regards to livestock sales, Hegelson, Dietz and Hochrainer-Stigler (2013) found that large households are more likely to sell livestock to cope with disasters. They further allege that this strategy increases the vulnerability of households. Also, Awotide *et al.* (2010) argue that an increase in household size increases the probability of farmers being poor because they fail to adapt to change.

3.3.4.5 Religion

In the study on economic activities, religion was used as a proxy for social capital. It was assumed in this study that religion plays a role in disseminating information on household livelihood activities. Thus, being a religious household head is likely to increase the probability of choosing a particular economic activity versus others because one will have ideas gathered through social capital. Halcon *et al.* (2009) indicate that women employed social capital as a coping strategy by discussing their problems with friends. In this regard, it is argued that when it comes to diversification strategies more religious individuals may be highly diversified than their

counterparts. In short, religion in this study is a proxy for social capital and is expected to increase the probability that a household has diversified its livelihoods.

A plethora of literature reveals that many livelihoods depend on social capital. For instance, Mukwada (2012) found that in Mufurudzi village, Zimbabwe, most households depended on social capital when they were displaced during land reform. Authors such as Khawaja *et al.* (2008), Amisi (2006), Northcote (2015), Barbelet (2017) and Kiboro (2017) also established that social capital is a strong determinant of coping with displacement. Therefore, proxying social capital by religion enabled this study to determine how social capital affects choices of coping strategies. In this context, religion needs to be further qualified. Religions such as Christianity, meet regularly unlike African Traditional Religion. Because of the regular religious gatherings, information may be easily and quickly disseminated among members. Therefore, being a Christian is likely to increase the probability of choosing a particular economic activity or having diversified livelihood activities.

3.3.4.6 Education

Rashid, Langworthy and Aradhyula (2006) highlighted that education determines coping strategies used by any individual. Households with educated members tend to diversify their incomes better, hence are less likely to need coping strategies when faced with shocks because income diversification on its own is an *ex-ante* coping strategy. However, in Cameroon, refugees from C.A.R had to change their economic activities because they could not be employed. Teachers were denied teaching jobs because in Cameroon teachers were supposed to be highly qualified as compared to those in C.A.R. However, among Syrian refugees, Alzoubi, Al-Samadi and Gougazeh (2017) found that education on its own was a coping strategy because it enabled IDPs to get jobs. After all, educated individuals had superior problem-solving abilities. On education as a determinant of livelihood, Adeniyi *et al.* (2016) established that education is a significant and positive determinant of livelihoods. Also, farmers who are better educated have a better understanding of livelihoods, therefore, are more likely to be diversified.

3.3.4.7 Duration of Stay in Arda Transau

The choice of economic activity may depend on the time spent in the post-displacement area. For instance, among C.A.R refugees in Cameroon, new refugees mostly relied on manual jobs while

those who had been there for long sought to diversify activities (Barbelet, 2017). Time is also associated with learning. If one strategy fails, the displaced will try another strategy until one strategy prevails. Therefore, the duration of stay could be viewed as a proxy for experience in the post-displacement location. Thus, duration of stay may be taken to play a critical role, therefore, the study expected that those IDPs who have been displaced earlier are likely to be more diversified. Also, Bozzoli, Bruck and Muhumuzah (2011) show that coping strategies differ according to the period that the IDP has stayed in a given place.

3.3.4.8 Economic Activity before Displacement

In this study, this variable was used to represent experience with an economic activity acquired in pre-displacement area. Along the lines of thinking of Amisi (2006), previous experience determines current economic activity, thus this variable was included. Those who had been in farming may be inclined to get into farming even after displacement while those who are experienced in petty trading will likely to be doing so. Individuals usually have a fear of the unknown, hence would want to play in familiar grounds, even though the situation or conditions may have changed. Thus, economic activity before displacement is likely to influence the current activities undertaken by households as suggested by Scudder (1985) that displaced households try to transfer economic activities from pre-displacement location to the post-displacement one. The same was found by Bozzoli *et al.* (2011) when they established that households whose heads were engaged in trading and herding before displacement were likely to do the same after displacement. Also, Fransen, Ruiz and Vargas-Silva (2015) noted economic activity before migration has implications on economic activities after displacement.

3.3.5 Economic Activities and Coping Strategies Used by Displacees

As alluded to before, to establish the various economic activities undertaken by each household, a pilot survey was done in 2014 which established that the IDPs use agricultural activities, exchange of goods for other goods, among a plethora of other activities as outlined below.

3.3.5.1 Agricultural Activities

Zimbabwe being an agrarian economy, one would expect the IDPs to again engage in agricultural activities like other rural households as revealed by Bird *et al* (2002). However, the

agricultural activity pursued by the IDPs may differ depending on individual household characteristics. Also, given the size of the land allocated to IDPs in Arda Transau, a rational choice has to be made by the households as to which crop and or when to grow that crop to get the best yield thus meeting the household's food requirements.

The agricultural activities in this study were divided into three categories, *viz*, food crop cultivation, cash crop cultivation and livestock production. From the perspective of diversification, the first two can be considered as horizontal diversification (Lekprichakul, 2009). On the one hand, to meet household food requirements, families may opt to grow their crops for family consumption. However, other families may opt to grow cash crops or rear livestock to use the proceeds to meet household food demand. On the other hand, diversification can be where only one activity is combined with another. Examples include rearing animals and growing food and or cash crops concurrently in one or different seasons with possible synergistic benefits such as using manure from animals as input in crop husbandry. Again, some proceeds from farms may be used as animal feeds. IDPs in Arda Transau were asked to indicate the agricultural activities they are now doing after displacement with permission to choose one or more of the activities which were listed.

Again, in the current study, it was assumed that any economic activity that mostly sustains the family after displacement is their main coping strategy; therefore, study participants were asked to identify that activity. The main economic activities were then grouped into employment, petty-trading, farming, asset disposal and any other besides the four mentioned, as already explained earlier.

3.3.5.2 Asset Disposal

In this study, two questions were asked to represent asset disposal viewed by other authors as an example of negative coping (Gao & Mills, 2017). One question relates to selling animals and other household assets. For instance, among C.A.R refugees in Cameroon, animals were sold to cope with displacement (Barbelet, 2017). Also, as a strategy to cope with weather disasters, rural Ugandans most frequently used livestock sales (Helgeson, Dietz & Hochrainer-Stigler, 2013). However, Rashid, Langworthy and Aradhyula (2006) argue that divestment will only be used after all other strategies have been exhausted. In that sense then divestment will likely be the

least used strategy and from their study, the trio found so. This is in tandem with asset-based theories of coping which discourage disposal of assets.

This study approached the asset disposal variable in two ways. Firstly, if animal or asset sales happened before and after displacement, IDPs were asked to compare the frequency of these sales. Thus, study participants were supposed to indicate whether this was a strategy they used in Chiadzwa and or is a strategy they were now using in Arda Transau and compare frequencies between the two periods. Should the sales increase in the post-displacement era, this was considered a coping strategy for that family. One factor, however, that could play a role is that some animals were lost due to displacement. In such circumstances, households could no longer rely on that approach as a coping strategy especially cattle sales. However, some families still have cattle although the numbers have declined.

The other question almost related to asset disposal is the barter trade issue. Households sometimes cope by trading items in return for other items. In an area where income is low and sources of income are scanty, barter trade is usually rampant. In this study, it was assumed that barter trade increased after displacement compared to before displacement, therefore, respondents were required to compare the frequency of use of barter trade before and after displacement. Should barter trade have increased, this was treated as a coping strategy.

3.3.5.3 Renting Farms

Renting farms is very common among landless households. Some rented farms are sharecropped or even rent is paid. In some cases, especially where land owned is small, IDPs may till land that they do not own. For instance, given the one hectare given to each household which may be considered inadequate, a family may rent a piece of land from someone to meet household land needs for farming and this land is usually obtained from the host community. Renting farms is a common practice in Zimbabwe, among landless households and in most cases, rentals are not paid for the use of the land. Thus, given such a scenario, tilling the land, that does not belong to these IDPs, at low or no cost is possible and will be a welcome development especially for young household heads who still have the vigour to do so.

3.3.5.4 Exchange of Labour

It is a common practice among IDPs to engage in exchange of labour by working on other people's farms especially to get material things. Money or income may be a secondary issue in such circumstances. Bird, Shepherd, Scott and Butaumocho (2002) indicated that poor households in some parts of Zimbabwe usually sell labour to other households, especially as a seasonal coping strategy, for instance, selling labour for weeding. This was also argued to be associated with poverty because households will have less time to work in their field thereby increasing the probability of food insecurity. It is, therefore, possible that IDP households in Arda Transau engage in such activities as coping strategies.

3.3.5.5 Consumption Smoothing

In circumstances surrounding displacement, households may undertake consumption smoothing. This comes in various forms such as reducing meal sizes. In the thesis, the size of the meal or eating less than what the family feels they need was viewed as a double-edged sword. First, it was viewed as a consequence of displacement. Secondly, this variable was viewed as a coping strategy. As a coping strategy, families engage in reducing meal sizes so that the food lasts longer and in the process, the family may be gathering resources to replenish the stock. However, as indicated by Hegelson, Dietz and Hochrainer-Stigler (2013), if the household is already at the subsistence level, this strategy will not be possible because it will have more negative ripple effects. Given that, the economic activities study does not take consumption smoothing as a coping strategy because it had already been viewed as a consequence of displacement. Combining the two views, that is viewing consumption smoothing as both a consequence of displacement and as a coping strategy, will complicate understanding among study participants and even the results analysis. Also, consumption smoothing as a coping strategy is usually applied at the early stages of displacement, so given the time between the displacement of people from Chiadzwa and time of data gathering for economic activities, it may be difficult to establish its usefulness.

3.3.5.6 Petty-trading

IDPs involve themselves in petty-trading to cope with consequences of displacement. Petty-trading comes in various forms but mainly deals with the sale of small items. For instance, on the

one hand, some households may engage in firewood selling as a form of getting revenue. On the other hand, some may gather wild fruits for both own consumption and sale. Also, some may be engaged in handicraft as a petty-trading activity with basket and mat-weaving used in Chiadzwa, as examples. Thus, besides getting into the formal labour market, households may engage in petty-trading thus possibly bringing in the added worker effect explained before. Levron (2013) also found that many women IDPs in Cote d'Ivoire work as petty-traders.

3.4 Satisfaction with Life among IDPs

The methodologies for the analysis of consequences of displacement and choice of economic activities have been presented in Sections 3.2 and 3.3 where the McNemar's and Stuart-Maxwell tests and MNL were considered as appropriate methods. This section now focuses on the methods of analysis for SWL. Variables creation procedures are also illustrated for a clear understanding of the variables under study. The methods used in the study take into consideration the objectives of the study which include quantifying life satisfaction and modelling life satisfaction among internal displacees.

3.4.1 Data

Data gathering techniques used in Section 3.2 were also applied in this study. Also, the same number of targeted respondents was used. To minimise misunderstandings of the questions by respondents, the questionnaires were interviewer-administered again. This was also meant to increase the response rate (Saunders, Lewis & Thornhill, 2012). The Temporal Satisfaction With Life Scale (TSWLS) proposed by Pavot, Diener and Suh (1998) was used as a scale for measuring life satisfaction, while the Short Adapted Social Capital Assessment Tool by Harpham *et al* (2002) and MacArthur scale were also used to measure social capital and social status, respectively. Data for this study were collected in 2017.

3.4.2 Satisfaction with Life Variables

This section defines and explains how the various variables used in the study are measured. This assists in giving the working definitions used in the rest of the study and how various constructs and variables are created.

3.4.2.1 Life satisfaction

Satisfaction with life in this study was measured by the Temporal Satisfaction With Life Scale (TSWLS) proposed by Pavot, Diener and Suh (1998). The TSWLS is a 5-item per period questionnaire that has proven to be psychometrically sound. Furthermore, it is a cognitive-judgemental process of measuring global life satisfaction. In the TSWLS by Pavot, Diener and Suh (1998) and Diener *et al.* (2000), the responses for each item range from 1 (Strongly Disagree) through to 7 (Strongly Agree) for the two periods used in this study, that is, pre-displacement and post-displacement periods with the post-displacement one being divided into current and future periods. Given such information, the overall life satisfaction score per period per individual respondent ranges from 5 (lowest satisfaction) to 35 (highest satisfaction) obtained by summing the responses. The higher the score, the higher the reported level of life satisfaction. The scale and even its predecessor, the Satisfaction With Life Scale, have been proven to have high alpha coefficient and test-retest reliability in several studies (Dubey & Agarwal, 2007; Swami & Chamorro- Premuzic, 2009; Gouveia *et al.*, 2009). Since the scale measures life satisfaction as a cognitive judgemental process (Gudjonsson *et al.*, 2009; Laghi *et al.*, 2016), it is appropriate for the current study, whose intention is to consider the cognitive life satisfaction, hence it was employed. Additionally, this is a useful way of gaining a valid overall rating of life satisfaction according to Daven (2004). The Satisfaction With Life Scale (a predecessor to the TSWLS by Diener *et al.* 1985) has also been used in Zimbabwe by Diener *et al.* (2000). So this is not the first time such a scale is used in the country although, in the study by Diener *et al.* (2000), it was used among college students. It is, however, the first time such a scale is applied to measure life satisfaction among internal displacees in Zimbabwe.

Ferrer-i-Carbonell (2013) noted that it is important to compare life satisfaction levels for each individual across time. Therefore, to cater for the comparative aspect of the study where there is a need to compare life satisfaction before and after displacement, the study made use of this modified SWLS is commonly known as the TSWLS as proposed by Pavot, Diener and Suh (1998). This scale makes comparison easy because it is designed in such a manner that it is in three phase-time frames. Thus, the approach used in this study is, as argued by Pavot, Diener and Suh (1998), the one where one could have subscales relating past, present and future life

satisfaction scales. This makes life satisfaction comparison across periods possible. The TSWLS is "... a highly consistent measure of global life satisfaction" (Pavot, Diener & Suh, 1998, p.340).

The TSWLS was slightly modified to reflect the specific time frames, that is, pre-displacement, and post-displacement era with the post-displacement era being further divided into current and future as also reflected by the TSWLS. Items included in the TSWLS include "I am satisfied with my life in the past (life in Chiadzwa)", "I am satisfied with my current life (Life after displacement)" and "I will be satisfied with my life in the future" among others. These three questions relate to the same concept at different periods. This enables comparison in these particular periods to be made.

Two major advantages of the TSWLS related to the current study have also been identified by Pavot, Diener and Suh (1998). The first advantage relates to the evolution of life satisfaction. In this case, life satisfaction developments in the pre- and post-displacement eras can be determined. Also, the expected trajectory of satisfaction with life among the displacees can be determined. Secondly, it provides a context within which the respondent has to answer the questions. Such a context comes in the sense that respondents have to evaluate their lives within a certain time frame and place. Also, the TSWL questionnaire was used because Ferrer-i-Carbonell (2013, p.36) noted that "[o]ver the last decades it has become clear that individuals can value their happiness or their satisfaction with their own lives". Therefore, the study did not expect any difficulties in the accuracy of the reported results. Lastly, the SWLS by Diener *et al.* (1985) has undergone extensive validation, hence, Erdogan, Bauer, Truxillon and Mansfield (2012) consider it to be the soundest existing scale currently available.

Table 3.3 shows the coding used to derive the SWL scores which yield the SWL variable. The life satisfaction variable created is an ordered categorical variable, therefore, the ordered choice model was applied. To create the ordered life satisfaction variable, life satisfaction scores were coded as shown in Table 3.3. The codes reflect an ordered characteristic in that the lower the code the lower the life satisfaction and *vice-versa*, hence this paved the way for use of ordered choice models, in particular the ordered logit model.

Table 3.3: Life satisfaction variable Creation

Sum (Category)	Code	Interpretation
5-9	1	Extremely Dissatisfied
10-15	2	Dissatisfied
16-19	3	Slightly Dissatisfied
20	4	Neutral
21-25	5	Slightly satisfied
26-30	6	Satisfied
31-35	7	Extremely satisfied

Source: TSWLS by Pavot, Diener and Suh (1998).

3.4.2.2 Age and age squared of the household head

Age in this study was measured as the number of years since the person was born. Age as a determinant of life satisfaction has been controversial since there is no consensus among authors on whether the old are generally happier than the young or the opposite is true (Kolosnitsyna, Khorkina & Dorzhiev, 2014). Some authors even suggest a U-shaped relationship between life satisfaction and age (Cao, 2016) hence the inclusion of age-squared in the analysis. This U-shaped relationship suggests that the young and the old are the age groups most satisfied with life in a society. The underlying argument is that the middle-aged group tend to have a lot to do, including providing material things for the young and the old. Thus, on the one hand, the middle-aged group faces family demands, work demands and even their own futures' demands. These stressful moments may reduce life satisfaction score for the middle-aged group. On the other hand, ageism theory suggests discrimination against the old and the young (Palmore, 1999; Ayalon & Tesch-Romer, 2018). Being prejudiced or discriminated against for being dependent on the middle-aged population, may reduce SWL among the old and the young. Ayalon and Tesch-Romer (2018, p.1) noted that with age comes "... the gradual deterioration of bodily functions that increases the risk for morbidity and mortality after maturation". The combination

of health deterioration and increased risk of morbidity associated with age is likely to increase stress thereby reducing elderly people's SWL. Therefore, from ageism perspective, one may suggest that SWL is higher among the middle-aged population as compared to the elderly and young thereby implying an inverted U-shaped relationship.

Conclusively, one can still accept the argument by Kolosnitsyna, Khorkina and Dorzhiev (2014) that age as a determinant of SWL is controversial. From the above discussion, it has been revealed that no consensus seems to exist as yet as to whether the elderly or the middle-aged population has higher SWL scores. Therefore, the expected signs on the age and age squared variables in this study remain ambiguous.

3.4.2.3 Employment Status

They also indicate that the effect of employment status on SWL remains controversial. Employment status was measured using categorical data. The respondents were expected to indicate their employment status with choices ranging from currently employed permanently (1), employed temporarily (2), self-employed (3) or unemployed (4). Since the study concentrated more on the employment status of the respondent, the first three categories were combined and given a single code for being employed (1) while the fourth one was coded 2 representing the unemployed. Literature has it that unemployment leads to low levels of life satisfaction (Frey & Stutzer, 2002; Stutzer & Frey, 2012) and this can even apply to both the employed and unemployed. It, therefore, entails that this variable is a potential key determinant of life satisfaction among the displacees.

3.4.2.4 Income

Income in the study was measured as any income from whatever source, be it earned, pension or allowances from other sources such as children and was measured every month as in the United Kingdom Household Longitudinal Survey and Moreira and Padrao (2004) study. Absolute income was measured as a categorical variable with the lowest group being $<US\$100$ and highest being $>US\$300$. The variable was then coded as 1 for $<US\$100$ through to 4 for $>US\$300$, thus giving an ordered categorical variable with four levels. These ranges were determined as under the consequences of the displacement section.

Income as a determinant of life satisfaction is one of the most controversial as already alluded to under literature review. In some strand of literature, life satisfaction is argued to be positively related to income while others argue that it is negatively related to income. Furthermore, other authors like Drakopoulos and Grimani (2013) and Howell, Kurai and Tam (2013) suggest a curvilinear relationship. Still, others consider absolute versus relative incomes as key in determining life satisfaction (Graham, 2005). Graham (2005) concludes that relative income is more important as a determinant of life satisfaction. In line with the social comparison theory, respondents were asked the question, “How do you compare your income with your neighbours’ income” which is an indicator of relative income. The responses for the question were “Less than” (coded 1), “The same as” (coded 2) and “More than” (coded 3), thus giving an ordered variable again but with three levels only. The relative income question was asked because individuals’ life satisfaction, as determined by income, is usually dependent on how individuals compare themselves with their colleagues. Those respondents whose incomes are relatively higher than those of their neighbours are likely to be happier than their neighbours. This is in tandem with findings by Ng, Tey and Asadullah (2017). However, rich in material wealth may not entail satisfaction with life because some individuals that the society may consider poor may be the happiest. Thus, income cannot be assigned a sign *a priori*. However, if income inequality in the area is low, individuals may report high satisfaction with life as argued by Roth, Hahn and Spinath (2017). All in all, two variables were considered in this study, one referring to absolute income and the other referring to relative income, all measured categorically though.

3.4.2.5 Social capital

Social capital is one key variable argued to affect the well-being of individuals. However, there is no consensus on how it is measured because of its multidimensionality (De Silva *et al.*, 2006; Sabatini, 2007). Sabatini (2007) further argues that this multidimensionality has made authors concentrate on those aspects of social capital relevant to their study. Kawachi *et al.* (1997) highlighted that the core concepts of social capital are civic engagement and mutual trust among community members. In line with Kawachi *et al.* (1997) and Sabatini (2007), the current study concentrates on cognitive and structural social capital. Cognitive social capital, whose proxy is usually trust (Sabatini, 2007) is argued to be positively related to well-being. Structural social

capital, usually proxied by organisational membership or civic engagement among others, was also empirically found to be positively related to well-being (Yip *et al.*, 2007).

To measure social capital, the Short Adapted Social Capital Assessment Tool (SASCAT) was used. The SASCAT has been noted to be robust and allows comparison across studies (Alvarez & Romani, 2017). The SASCAT instrument was developed to measure personally owned cognitive and structural social capital in less developed countries such as Zimbabwe.

As just alluded to, this study concentrated on structural and cognitive social capital which makes the SASCAT applicable. The SASCAT has nine questions, five measuring structural social capital through group membership, group and individual support and citizenship activities. The creation of a variable representing structural social capital is still not agreed just like social capital measurement itself. To mitigate this problem the study followed works by Takahashi *et al.* (2011) where each component of structural social capital was analysed independently. Thus, the constructs were individually analysed.

For group membership, the idea is that displacees who belong to more groups find solace in their associations and hence may report high life satisfaction than the non-members. This solace may come from the social resources derived from membership. In line with the work of Takahashi *et al.* (2011) structural social capital components of group membership, group support and support from individuals were categorised as follows, not an active member or did not get support from any group or individual (0), active in one group or got assistance from one group (1) and an active member to more than one group or got assistance from more than one group or individual (2).

Unlike structural social capital, cognitive social capital was captured by trust, among others (Yip *et al.*, 2007) where respondents were asked to indicate whether they trust their neighbours or people in their community. Four questions adopted from the SASCAT instrument were used to measure cognitive social capital and the questions read, "In general, can the majority of people in this community be trusted?" and "Do you think that the majority of people in this community would try to take advantage of you if they got a chance?". The two questions were responded on a "No" (coded 0) and "Yes" (coded 1) scale. In the analysis, the second question was then reverse coded. The third question read, "Do the majority of people in this community generally

get along with each other?", while the fourth read, "Do you feel as though you are a part of this community". The two questions were also responded on a Yes and No basis and coded like the first two. The cognitive social capital components were summed to come up with one variable representing cognitive social capital. Low cognitive social capital was determined by a sum less than or equal to two while high cognitive social capital was denoted by a sum equal to three or four (Takahashi *et al.*, 2011).

3.4.2.6 Social Status

Subjective social status has been largely ignored in literature as a determinant of life satisfaction. A person who thinks they are better off than their colleagues is expected generally to report higher levels of life satisfaction under the social comparison theory or reference norm hypothesis. Social status in this study is broken down into objective and subjective components. The MacArthur scale, also popularly known as the Cantril (1965) ladder, was used to measure subjective social status (Dennis *et al.*, 2012; Giatti, Camelo, Rodrigues & Barreto, 2013; Sanchon-Macias *et al.*, 2013; Landefeld *et al.*, 2014; Shaked, Williams, Evans & Zonderman, 2016). The scale, sometimes referred to as the Cantril (1965) ladder, requires respondents to indicate the rank to which they belong on the ladder numbered one to ten has been shown to validly and reliably indicate one's social status in their society (Dennis *et al.*, 2012). Therefore, during the interviews, respondents were shown the numbered ladder and were asked to indicate the rank to which they belong in their community with the understanding that at the top are those people who have the highest standing and at the bottom are the people who have the lowest standing in their neighbourhood.

On the MacArthur scale or Cantril ladder, the higher one perceives they stand, the higher their social status (Shaked *et al.*, 2016). In the analysis of results, the following grouping was done: very bad (1-2), bad (3-4), regular (5-6), good (7-8) and very good (9-10) in line with Sanchon-Macias *et al.* (2013). Although the MacArthur scale has two versions, the society and the community versions (Giatti *et al.* 2012), the current study employed only the community version because it is the one that is relevant to the study.

While income can be measured in absolute or relative terms, the relative term can also reflect objective social status. Thus, the relative income question played a role of income comparison as

well as objective social status (in line with the social comparison theory). Those displacees who have relatively higher income tend to have a higher social status than others and will be expected to report higher life satisfaction. Objective social standing was also measured by education level attained with those who are highly educated having a higher social standing. Despite this line of reasoning, the current study used education as a proxy for human capital embodied in the displacees.

3.4.2.7 Education

Education in the current study was measured as the highest academic level attained by the respondent. Mostly highly educated individuals in less developed countries report high levels of life satisfaction (Ambrey & Flemming, 2011). In Asia, Ngoo, Tey and Tan (2014) established that the highly educated tend to be happier than the less educated the reason being that a highly educated individual stands a chance of getting a high paying job hence reports a higher life satisfaction. From this reasoning, it seems education on its own is not the source of satisfaction with life but what it gives the holder becomes the determinant of satisfaction with life. Educational attainment was categorised as “primary” (coded 1), “secondary” (coded 2) and “higher than secondary” (coded 3). This results in an ordered categorical education variable. Although the post-secondary category is broad, it was bunched into one group because very few study participants fell into this category.

3.4.2.8 Gender

Frey and Stutzer (2002) highlighted that literature generally argues that women are happier than men. These findings were also confirmed by Ng, Tey and Asadullah (2017) among Chinese population of old people. On the contrary, in Central and West Asian countries, males reported higher life satisfaction than the females (Ngoo, Tey & Tan, 2014). This, therefore, may be taken to be a sign of controversy among findings.

In the current study, gender was considered a dummy variable with males being assigned zero and females having one. Using literature on internal displacement, women are found to be more affected by displacement than men, thus it will be plausible to hypothesise that female displacees are likely to report lower levels of satisfaction than male ones. However, the current study

hypothesises no difference in reported life satisfaction among female and male internal displacees in Arda Transau, which is in line with findings by Fugl-Meyer, Mellin and Fugl-Meyer (2002) that life satisfaction is not gendered. This was also supported by the controversy between findings by Ng, Tey and Asadullah (2017) and Ngoo, Tey and Tan (2014).

3.4.2.9 Neighbourhood characteristics

Individual life satisfaction is also determined by the surrounding areas in which the individual resides (Veenhoven, 1995; Ali, Murshed & Papyrakis, 2019). In this study, it is argued that the five areas have different amenities that may determine one's life satisfaction. Examples include Anjin and part of Jin An; both have piped water which may increase life satisfaction but at the same time may reduce life satisfaction since the residents were promised not to pay for water but are now required to do so. Also, Anjin has tarred roads unlike other areas such as Mbada and DMC, while DMC does not have piped water but has community boreholes and is well-furnished with solar power. These may then also determine the life satisfaction of these areas' residents. Apart from all these unique area-specific characteristics, the whole study site is generally overcrowded hence this may lead to lower reported life satisfaction as was found by Cao (2016) that those in high-density suburbs report low life satisfaction than their counterparts in low densities. In line with these arguments, despite being asked to indicate their area of residents, respondents were asked to indicate how generally satisfied they are with the area in which they reside, that is the surroundings. The question was responded on three levels of response ranging from dissatisfied (1) to satisfied (3).

3.4.2.10 Marital status

Married individuals usually report higher life satisfaction than the non-married group (Naess, Blekesaune & Jakobsson, 2015; Boyce, Wood & Ferguson, 2016), thus concurring with the social causation theory. In this regard the study expects the married persons in Arda Transau to report high levels of life satisfaction as compared to other groups. On the contrary, the social selection theory predicts causality to run from satisfaction with life to marriage, implying that those who are generally satisfied with life are likely to get and remain married. The social causation theory was assumed in this study because the social selection theory could not be

tested since the interest of the study was on whether marital status determines SWL and not the opposite as espoused by the social selection theory.

Marital status in this study is a categorical variable with four levels, *viz* currently married, widowed, divorced and never married. However, in the analysis of results, more emphasis was given to whether one is currently married or not, thus, giving two levels of a categorical variable.

3.2.2.11 Perceived Health Status

Health is part of a country's human capital (Constant, 2017). Reported health status, sometimes termed self-rated health, has been argued to predict life satisfaction very well (Karavdic & Baumann, 2014) and in line with this literature argument, the study argues that those individuals who may report ill-health after displacement are also likely to report lower life satisfaction after displacement. It is, therefore, plausible to argue that those who attribute ill-health to displacement will be dissatisfied with their current lives. However, it is also plausible to argue that since medical facilities are almost now within their close vicinity, the IDPs may report better health as a result of improved access. Two questions were used to measure perceived health status. One of the questions related to perceived health status *per se* while the other related to whether there is a change in health status that can be attributed to displacement. The two questions were answered on a categorical basis with the first one having five levels, namely; Very Good through to Very Bad, while the second had three levels which are Improved, Remained the Same and Worsened.

Related to the change in health status attributed to displacement, is health convergence between migrants and natives. However, health convergence is mostly considered in international migration where literature suggests that international migrants usually arrive in host countries with a better health status than locals but as time elapses, their health status converge to that of the natives (Constant, 2017). Constant (2017) suggests that the immigrant health may even deteriorate below that of natives, a phenomenon found by Goldman, Pebley, Creighton, Teruel, Rubalcava and Chung (2014). The health convergence theory is said to be also applicable in the context of self-rated health (Loi & Hale, 2019).

Goldman *et al.* (2014) and Loi and Hale (2019) established that migrants' health converges towards the natives' health as time progresses. Although there is no universal definition of material deprivation (Toge & Bell, 2016), it has been noted that health convergence usually applies to migrants who have material deprivation (Loi & Hale, 2019). Such deprivation might be as a result of the absence of work permits or even travel documents, in international migration. Therefore, the migrant may not access health facilities because they do not have necessary documents allowing them to be in that particular country. Again, health convergence was argued to be most "... dramatic for self-rated health..." (Loi & Hale, 2019, p. 933). Several explanations have been proposed for this convergence of which stress is among them. In some societies, the USA in particular, immigrants are usually viewed as being of lower status (Goldman *et al.*, 2014) and immigrants face discrimination. Therefore, this adds stress to migrants' life. Loi and Hale (*ibid*) also noted that the worsening of migrants' health is a result of health assimilation where migrants adopt the health behaviours of host communities in a bid to seek contact with that community. Again, the choice of reference group may lead to such convergence or divergence in health status. In short, migrants' health has been found to sometimes converge to host community's level.

With the health convergence hypothesis in mind, it may mean that if IDPs' health status is perceived to be worse than before displacement, they will have converged to the host community's health status and *vice versa*. Therefore, reported satisfaction with life is likely to be lower if IDPs' health has converged to the local ones, assuming the natives have lower health status. However, this may not be a plausible argument given that health facilities, including a provincial hospital in Mutare, maybe closer in Arda Transau than in Chiadzwa.

3.4.2.12 Household Size

Family size in this study was measured by the number of members in the family as was also done by Jaunky, Jeeto and Rampersad (2019). As family size increases, competition for available resources in the family increases and hence is likely to reduce individual satisfaction and household satisfaction with life as a whole. Also, family size is a measure of an individual's or family's poverty status (Mafini, 2017). Smaller family size enables one to attain better and higher levels of education and access better health facilities, among others. From these

perspectives, an inverse relationship between household size and satisfaction with life is expected.

From another angle, familism argues that the family is more important than the individual. In this context, as family size increases, satisfaction with life is likely to go up. This may be viewed as the objective of a male household head who is a polygamist. Jaunky, Jeeto and Rampersad (2019) also noted that a positive association between SWL and family size may exist because of the probable reduction in the degree of selfishness. Therefore, the sign on the relationship between household size and SWL remains ambiguous (Jaunky, Jeeto & Rampersad, 2019).

3.4.3 Quantification of Life Satisfaction

In a bid to quantify life satisfaction among internal displacees, the study used an approach almost analogous to that by Najib, Yusof and Osman (2011) and Peterson, Park and Seligman (2006). This approach for quantifying life satisfaction was done through calculating the life satisfaction score with a minimum of 5 and maximum of 35 given a 5-item scale for each respondent for each period used in this study. Those households who had a life satisfaction score between 5 and 9 inclusive were considered to be very dissatisfied with their lives while those whose scores were between 31 and 35 inclusive were considered extremely satisfied under the interpretation of the Temporal Satisfaction With Life Scale as was given in Table 3.3. This was done for the past, current and future life satisfaction scores. After getting the life satisfaction score for each household, the study proceeded by getting total life satisfaction for all the study participants in the study area. This was done by summing the life satisfaction scores of all respondents then divide by the number of respondents. The results were interpreted as under the Temporal Satisfaction With Life Scale interpretations presented in Table 3.3.

3.4.4 Modelling Life Satisfaction

Graham (2005) argues that since answers to happiness questions are naturally ordered, they must be analysed via an ordered model. Therefore, following this recommendation and the works of Stutzer and Frey (2006), Huang, Du and Yu (2015) and Ng, Tey and Asadullah (2017), the current study used an ordered logit model to find the determinants of SWL among IDPs in Arda Transau. The ordered logit regression is applicable since the outcome variable in the study is ordinal, that is, life satisfaction scores are obtained by summing the 5-item responses, for each

period with, the lowest total of 5 to a maximum of 35, with 35 showing highest life satisfaction as compared to 5 which shows lowest life satisfaction. These totals are then coded 1 to 7 as already clarified in Table 3.3. The logit regression group of models provides more powerful tests and is easy to interpret (Azen & Walker, 2011). Given that the dependent variable is unobservable, one cannot use standard regression methods. In such cases, models that use latent variables must, therefore, be applied such as the ordered logit or probit models. The ordered logit and ordered probit models give similar results even though the probit one requires normal distribution of the error terms while the logit one assumes a logistic function. It has also been found that logit estimates perform better than probit (Dow & Endersby, 2004). The current study, therefore, chose to use the ordered logit model.

The ordinal logistic model for the response categories can be specified as follows:

$$y_i = \begin{cases} 1 \Rightarrow SDA \\ 2 \Rightarrow DA \\ 3 \Rightarrow SLDA \\ 4 \Rightarrow NA / NDA \\ 5 \Rightarrow SLA \\ 6 \Rightarrow A \\ 7 \Rightarrow SA \end{cases} \text{-----3.5}$$

In equation 3.5, y_i indicates the life satisfaction score for individual i . SDA, SLDA and DA indicate Strongly Disagree, Slightly Disagree and Disagree, respectively. NA and NDA indicate Neither Agree and Nor Disagree, respectively. Lastly, SLA, A and SA stand for Slightly Agree, Agree and Strongly Agree, respectively.

Given that life satisfaction is a latent variable, the general specification of the single equation model is:

$$y_i^* = \hat{X} \beta + \varepsilon_i \text{-----3.6}$$

Where y_i^* is an unobserved latent variable measuring life satisfaction for displacee i ? It is derived from its observed ordered version as explained in Table 3.3. \hat{X} is a $(K \times 1)$ vector of observed

explanatory variables measuring the attributes (income, marital status, employment status, among others) of the individual displacee i . β is a $((K \times 1))$ vector of unknown parameters and these have to be estimated in the model. Finally ε_i is a random error term.

The ordered multiple-choice models in which the ordered logit and ordered probit models belong to assume the following relationships to hold (Abdel-Aty, 2003):

$$\sum_{j=1}^j P_i(j) = F(\alpha_j - \beta_j \chi_i, \theta), j = 1, 2, 3, \dots, J - 1 \text{-----} 3.7a$$

$$P_i(J) = 1 - \sum_{j=1}^{j-1} P_i(j) \text{-----} 3.7b$$

Where $P_i(j)$ is the probability that individual i (where $I = 1, 2, 3, \dots, n$) belongs to category j . α_j is a specific constant while β and X are as outlined in equation 3.6. θ is a parameter that controls the shape of F . That is it determines whether F is normally distributed resulting in ordered probit or logistically distributed yielding an ordered logit model. Both ordered logit and probit models have yielded similar findings on several occasions, resulting in authors choosing one of them or use both. From this argument, the current study, therefore, chose the ordered logit as also used by Stutzer and Frey (2006), Huang, Du and Yu (2015) and Ng, Tey and Asadullah (2017).

3.5 Chapter Summary

This chapter highlighted the methods used in data gathering and data analysis. While non-parametric methods such as McNemar's test and Stuart-Maxwell tests were stated as data analysis methods for economic consequences data, MNL and Ologit models were specified as the methodologies used in analysing data on coping strategies and SWL, respectively. The next three chapters present and interpret the results of the thesis in the order in which the methodologies were specified in this chapter. Thus, Chapter Four presents the results of the study on economic consequences of mining-induced displacement while Chapter Five presents results for the economic activities study. The last chapter on results presentation is Chapter Six which presents results on the SWL study.

CHAPTER FOUR: THE ECONOMIC CONSEQUENCES OF MINING-INDUCED DISPLACEMENT IN ARDA TRANSAU

4.1 Introduction

With the methods of analysis having been clarified in Chapter Three, this Chapter presents and analyse results from the study on economic consequences of mining-induced displacement. Section 4.2 presents study findings while Section 4.3 discusses the results. Findings, in brief, indicate economic losses among IDPs. Land and social capital are among the top variables to have been lost. Finally, Section 4.4 summarises the chapter and clarifies the connection with Chapter Five.

4.2 Economic Consequences of Displacement

This section of the thesis reports the findings on the economic consequences of internal displacement. For variables measured categorically, results are based on non-parametric tests such as McNemar's test, Stuart Maxwell test and sign test while for the count and continuous variables, the Wilcoxon test was the method of analysis used. In summary, the results reveal losses incurred by the IDPs in Arda Transau implying that relocating from Chiadzwa generally disadvantaged households.

4.2.1 Summary Statistics

Descriptive statistics were employed to examine the extent to which the displaced persons have suffered the consequences, for example, landlessness, loss of both animals and income. Data presentation was done mostly using tables. Statistics on mean, median and variance were used to describe continuous variables. One of the key items to note is that most of the data collected were treated as paired observations because questions referred to pre- and post-displacement data for an individual household. This also implies that there is a paired-related observation under study which resulted in the use of a case-crossover design by Maclure (1991).

Out of a sample of 274 participants, 248 (90.51%) questionnaires were usable while the others were not. Those not usable were discarded on the reason of, among others, incomplete

information given. Successful questionnaires were distributed as 14 from Diamond Mining Corporation (DMC), 128 were from Anjin, while 47, 31 and 28 were from Jin An, Marange Resources and Mbada Diamonds, respectively.

Ninety- eighty (about 40%) of the household heads were females while the remaining 150 (about 60%) were males. The ages of the respondents which ranged from below 20 years to above 60 years of age showed that only 7 household heads were aged below 20 years while 39 were above 60 years. Most of the household heads were in the age range of 31-40 years numbering 77 (31%) out of which 48 were males and 29 were females. Table 4.1 shows the distribution of household heads by age and gender.

Table 4.1: Household heads' Distribution by Age and Gender

	Gender		
Age	Male	Female	Total
Below 20	1	6	7
20-30	27	23	50
31-40	48	29	77
41-50	33	12	45
51-60	18	12	30
Above 60	23	16	39
Total	150	98	248

Table 4.1 indicates that out of the 150 male-headed households, most (32%) belong to the 31-40 years age group while about half of that (15%) fall in the elderly ages of over 60 years. Additionally, most (about 30%) of female household heads are also within 31-40 years and 16% within the above 60 years category. For all age groups the number of male-headed households is more than those headed by females except for the group headed by those under 20 years of age where from a total of seven, six household heads are female-headed compared to one which is male-headed.

To determine the extent of the losses incurred (in animal ownership terms), the thesis considered the average number of livestock owned before and after displacement. Summary statistics for selected animals are presented in Table 4.2. The minimum number of animals owned was found to be zero for all animals.

Table 4.2: Average Number of Animals Owned Before and After Displacement

Animal	Mean	Standard Deviation (SD)	Maximum value
Goats before displacement	14.09677	15.67557	100
Goats after displacement	5.28629	9.165742	60
Cattle before displacement	7.637097	9.92142	63
Cattle after displacement	3.568548	5.307101	29
Chickens before displacement	16.83871	16.591	110
Chickens after displacement	8.201613	8.984449	60

Table 4.2 illustrates that the maximum number of chickens owned before displacement was 110 with an average of 17 (standard deviation (S.D.) = 16.6) chickens per household. Strikingly, immediately after displacement, each household on average had 8 (S.D.=9) chickens which is about half the number owned before displacement. In monetary terms, assuming a rural area price of a road-runner to be US\$5 (price determined from discussions with displacees), it means

all the study participants combined lost on average US\$11 160 (Calculated as US\$5 by 9 chickens by 248 households). Assuming the whole community made up of 930 households, the figure rises to an average loss of US\$41 850. This way of calculating costs was previously used by Deressa, Hailemariam and Ali (2007) when they calculated the costs of malaria.

For cattle, before displacement, each household had on average 8 (S.D=10) herds of cattle while after displacement the figure fell to 4 (S.D=5), again about half the number owned before displacement. Again assuming an average rural area market price of cattle of US\$500 per beast, the loss incurred by all displaced households amounts to an average of US\$1 860 000 (calculated in the same manner as chickens). In like manner, one can calculate the monetary value of lost goats as follows: 9 goats lost at US\$35 each by 930 households. This gives a total of US\$ 292 950.

Combining these animal losses alone, a loss for the study participants of US\$2 194 800 has been incurred by IDPs. It is imperative to note that this is compared to a US\$1000 disturbance allowance given to each household which, if calculated in the manner used for animal losses, will give US\$930 000 in disturbance allowances, reflecting a minimum shortfall of US\$1 264 800. These arguments are based on certain assumptions such as the assumption that houses built in Arda Transau are of the same monetary value as those that IDPs have built before displacement. If other losses such as land, jobs and social capital are to be put in monetary value, the value lost will be even higher. Again, if other animals such as pigs and sheep are to be included in the calculations, the figure will be way above the allowances given. From these calculations, it may be plausible to conclude that IDPs have been under-compensated by being given US\$1000 per household with a minimum under-compensation amount of US\$1 360 per household. The under-compensation amount per household was calculated as:

$$US\$1264800 / 930 = US\$1360$$

4.2.2 Diagnostic Tests

To establish the best approaches to analyse the data, a rigorous diagnostic analysis of the data was done. The data characteristic that is central in establishing methods of analysis for continuous variables is the normality test. Various methods are used to establish the normality

characteristics of data such as the Kolmogorov-Smirnov (KS) test, Lilliefors test, Anderson-Darling (AD) test, Shapiro-Wilk's (W) test and Doornik-Hansen (DH) test, among others. The choice among these tests is still debatable but the most used so far is the Shapiro-Wilk's test which is more powerful than the others (Razali & Wah, 2011). The thesis, therefore, used the Shapiro-Wilk's test. The Shapiro-Wilk's approach tests the null hypothesis that the data is normally distributed against the alternative that it is not normally distributed. In the findings, if the null hypothesis is rejected the data is considered not to be normally distributed implying that parametric tests will not be suitable.

The Shapiro-Wilk's test was performed on animals owned before and after displacement and distances travelled to social amenities before and after displacement to test their univariate normality. These were required for the research to be able to choose between the paired-t-test and the Wilcoxon signed-rank test. The study found that the data did not follow a normal distribution $p < 0.001$. A variable for the differences of animals owned before and after displacement was created and these differences were also tested for normality of which the findings also could not accept the normal distribution of the data $p < 0.001$. Table 4.3 reports the findings on the normality of the differences, between animals owned in pre- and post-displacement periods, using Shapiro-Wilk's test.

Table 4.3: Shapiro-Wilk's Normality Test for Animals Owned

Variable	The test statistic (W)	P-Value
Goats	0.77495	0.0000
Cattle	0.66705	0.0000
Sheep	0.51482	0.0000
Chickens	0.70939	0.0000
Pigs	0.40487	0.0000

All variables have a p-value that is statistically significant at 5%, $p < 0.001$ and hence the research rejected the null hypothesis that the change in the number of animals owned before and after displacement is normally distributed. The conclusion, therefore, is that the Wilcoxon signed-rank test is the method of analysis.

On distances travelled to certain amenities, a Shapiro-Wilk's test was also performed and the findings are reported in Table 4.4.

Table 4.4: Shapiro-Wilk's Normality Test for Distance Travelled to Selected Amenities

Variable	The test statistic (W)	P-Value
Distance to school	0.72704	0.0000
Distance to the clinic	0.94127	0.0000
Distance to a water source	0.52547	0.0000
Distance to town	0.80653	0.0000

Findings in Table 4.4 indicate that these variables do not follow a normal distribution since $p < 0.001$. Thus, the study failed to reject the alternative of non-normality. It, therefore, means that the Wilcoxon signed-rank test can be safely used in the analysis of distances travelled to these selected amenities.

4.2.3 Statistical Analysis of the Economic Consequences of Displacement

The study intended to explore the economic consequences of internal displacement in Zimbabwe. In a bid to attain this broad objective, quantitative analysis of data was used. The thesis reports exact p-values in the tables of results and variables are considered significant using the 5 % level of significance.

4.2.3.1 Results on Categorical Variables

Results for categorically measured variables are presented in this section. These results are mostly from McNemar's and Stuart-Maxwell tests.

i. Employment Status

As alluded to in the methodology section, employment status was categorised into four groups, viz permanent, temporary, self-employed and not employment. Two groups (permanent and temporary employment statuses) were combined to meet the chi-squared requirements on several observations. The generalised McNemar's test proposed by Stuart (1955) and Maxwell (1970) was used to establish whether IDPs significantly lost their employment after displacement. Results in Table 4.5 show that $\chi^2(2, N = 248) = 41.15, p < 0.001$ implying that displacement has a statistically significant negative effect on employment status. The results that show that displacement led to joblessness are in line with Cernea (1995a, 1997a, 2000).

Table 4.5: Employment Status Analysis

After				
Before displacement	Employed	Self-employed	Not employed	Total
Employed	26	10	18	54
Self-employed	8	39	54	101
Not employed	6	7	80	93
Total	40	56	152	248

Symmetry (asymptotic) $\chi^2 = 42.44$ (3 df), $p = 0.00$

Marginal homogeneity χ^2 statistic (Stuart-Maxwell test) = 41.15 (2 df), $p = 0.00$

The findings also indicate that 54 (about 53%) of the 101 household heads who were self-employed before displacement became unemployed in the post-displacement era. This group is

also the one that contributed much to the symmetry chi-square with a value of 36.2131. This perhaps means that while the displaced were surviving on self-employment in Chiadzwa, in Arda Transau it is not possible to do so because the survival strategies they used in Chiadzwa may no longer be applicable. Thus, displacement had a statistically significant negative effect on employment status $p < 0.001$.

Therefore, households have lost employment significantly due to displacement. These findings are in line with the literature, such as the arguments posed by Cernea (1995a; 1997a; 2000; 2003) who iterated that displacement leads to unemployment. Again, the results are in line with the findings of Oucho (2005) who found that displacement led to joblessness in Zimbabwe. Also, Sachikonye (2003b) and Sachikonye (2005) indicated that the FTLRP in Zimbabwe also led to the loss of employment. Again, Megento (2013) found that unemployment among women displacees in Ethiopia increased from 18% before displacement to 43.3% after displacement.

In the case of Chiadzwa, while the majority were not permanently employed, they sustained their life on self-employment. Discussions with the displacees revealed that in Chiadzwa households used to engage in basket-weaving and mat-weaving (which may be collectively termed handicraft) and selling of wild or indigenous fruits such as baobabs to complement other economic activities and some households even relied on these activities alone. In the new location, such activities are no longer possible because the materials such as the ones used for basket and mat weaving are not there in Arda Transau. This result is consistent with what Barbelet (2017) found among forced migrants in Cameroon that some changes in economic activities are necessitated by the absence of inputs in post-displacement location. Based on these findings one can conclude that a life-long skill learnt has been lost, thus decapitalising these displacees.

ii. Food Security

The food security variable in this study was in three different forms ranging from reduction in meal sizes to anxiety about food shortages. Thus, this variable was analysed using these components as indicated next.

a) Reducing Meal Portion

Reducing meal portion or eating less than what one feels they should is a sign of food insecurity in a household. The other dimension that signals food insecurity is reducing the number of meals say from an average of three (breakfast, dinner and supper) to anything less than three. To analyse the dimension of food insecurity relating to several meals or their size, the study employed the McNemar’s test whose results are reported in Table 4.6.

In Table 4.6 it is shown that out of the 248 households, 119 (about 48%) reported having been eating enough before displacement but ate less than enough after displacement contrary to 65 of the households who were eating enough in both pre-and post-displacement periods. The "Not Sure" response had very few responses, some being zero, therefore the study combined it with "No reduction in meal portions" response. For instance, in Table 4.6 the group of those who ate enough before displacement and few after displacement is reported as 122 which is made up of 119 who reported eating enough before displacement and few after displacement and three who were not sure whether the meal proportion changed after displacement.

Table 4.6: Reducing the Size of Meal

		Before		
After		Yes	No	Total
Yes		65	122	187
No		35	26	61
Total		100	148	248

McNemar’s test $\chi^2 = 48.21(1\ df), P= 0.000, Exact\ McNemar\ Significance\ P\text{-value} = 0.000$
Odds ratio=3.4857, 95% CI=(2.3766, 5.2321)

Thus, McNemar’s test was performed after combining the two groups. McNemar’s test results in Table 4.6 show a statistically significant reduction in meal portions,

($\chi^2(1, N = 248) = 48.21, p < 0.001$). In line with these findings, Carrillo (2009) also found similar results in Colombia where it was established that displaced families ate less than three meals a day. Findings in South Sudan also revealed that IDP families had to skip meals after displacement (UNICEF; 2015). In Zimbabwe, Sachikonye (2004) found that after the FTLRP, households became food insecure.

b) Anxiety

The other variant of food security is whether families are anxious about their food adequacy. A McNemar's test was also applied to determine if after displacement households became anxious about their food security and results are shown in Table 4.7.

Of the 102 households who were anxious about food security in Chiadzwa, 64 (63%) remained so after displacement while out of the 146 who were food secure 128 (88%) were now anxious in the new residential place. The total number of households who were food secure in Chiadzwa who now were insecure in Arda Transau summed up to 38 (about 37%). The proportion of households who were anxious over food adequacy increased in post displacement era compared to the pre-displacement era (192 households (77%) compared to 102 households or 41% of all households).

Table 4.7: Anxiety

Before			
After	Yes	No	Total
Yes	64	128	192
No	38	18	56
Total	102	146	248

McNemar's $\chi^2(1) = 48.80, P\text{-value} = 0.000$

Exact McNemar significance $P\text{-value} = 0.000$

The increase in anxiety over food adequacy was found to be statistically significant as shown by $\chi^2(1, N = 248) = 48.80, p < 0.001$. Congruent with these results is the finding that 178 (72%) of the respondents spent at least a day without food in the post-displacement period compared to 70 or 28% who did not. This was revealed by the analysis of the third aspect of food security where households were supposed to indicate whether they felt hungry but could not eat because they had no money to buy food. Once one has spent someday without food they are likely to be anxious in the next season or day. Also, possibly because of lower incomes after displacement, as will be explained later on, households could not afford three meals a day. Li-Ching, Ya-Ping, Jung-Sheng, Jia-Hui and Huei-I (2006) also found that low-income earners are usually anxious about their food adequacy and concluded that food insecurity is of concern among low-income households.

Conclusively, one can deduce that most of the displaced households in Arda Transau are food insecure as shown by Tables 4.6 and 4.7 since the displacees were anxious about the adequacy of their food as well as having reduced the size of their meals. In extreme cases, they even did not eat anything despite being hungry. Respondents were asked whether they were ever hungry but did not eat because they did not have enough money to buy food during the past twelve months to which the majority, 178 (72%), indicated that they had that experience after displacement. This is an indication of food poverty.

The findings on food insecurity are not unique to Arda Transau residents alone. For Zimbabwe, Sachikonye (2003b; 2004) and Oucho (2005) established the presence of food insecurity after forced relocation using non-statistical methods. This thesis has, however, statistically confirmed that there exists a difference between food security before and after displacement with IDPs becoming food insecure after mining-induced relocation. In Mexico, this result was also found by Acharya (2009), who found that most women and children suffer from chronic food shortages after displacement. Fiala (2012) also established a decrease in consumption after the conflict-induced displacement in Northern Uganda. Additionally, Cernea (1997a) revealed that food insecurity results since it will take time for the displacees to rebuild regular food production in the new site. This may be argued to hold in the Arda Transau case. In some cases, food relief had to be provided as shown by Cernea (1997a). However, as argued by Cagoco-Guiam (2013), this

relief may not reach the desired beneficiaries because of poor targeting by the donors or the food may be seized by the governments. The same could be said about Arda Transau because households indicated that relief agencies such as NGOs were denied access to the area by the Government, a phenomenon similar to that stated by Mooney (2005) that development-induced displacees receive less or no assistance from governments or international agencies.

Another variable that may significantly contribute to food insecurity is the loss of income as reported in Table 4.9 where it is noted that about 96% are earning less than what they used to earn before displacement. This again can be attributed to the loss of employment as reported in Table 4.5. The reduction in income after displacement as proposed by Cernea's resettlers' income curve (Cernea, 1995a) cannot be refuted in this study. This reduction can, therefore, feed into households' failure to afford food thereby leading them to be food insecure through failure to fulfil the food accessibility construct.

iii. Marginalisation

Table 4.8 reports results on credit access among IDP as one proxy formarginalisation. Marginalisation has serious consequences on welfare, especially among IDPs. To assess whether displacement has led to the marginalisation of the displaced, the thesis used several questions relating to pre- and post-displacement era. Analysis of results was through the Stuart-Maxwell test, among other tests. Variants of the variable are being denied credit as well as lost supplies of goods. Results for being denied credit are reported in Table 4.8.

a) Denied Credit

According to the intertemporal consumption theory, the availability of credit enhances the income of households, therefore, consumption. Literature suggests that credit is denied once one is (or is about to be) displaced (Cernea, 1995a; Megento, 2013; Barbelet, 2017). The findings in Table 4.8 indicate that 18 households could not tell whether they were denied credit after displacement but were not denied credit before displacement. This may imply that these 18 respondents may not have been denied credit or did not even apply for credit from any source of their choice. However, 51 of those who were not denied credit in the previous location were denied credit in the current location.

Table 4.8: Denied Credit

Before				
After	No	Not sure	Yes	Total
No	61	2	29	92
Not sure	18	29	5	52
Yes	51	5	48	104
Total	130	36	82	248

Symmetry (asymptotic) $\chi^2 = 18.85$ (3 df), $P = 0.0003$

Marginal homogeneity χ^2 statistic=17.15 (2 df), $P=0.0002$, (Stuart-Maxwell test),

McNemar's test $\chi^2 = 6.05$ (1 df), $P=0.0139$

The findings reported in Table 4.8 are consistent with Barbelet (2017) who found that migrants are usually denied credit because of the possibility of migrating again without repaying the loan. Only 48 households indicated to have been denied credit in both pre-and post-displacement periods, while 61 reported to have not been denied credit in those two periods.

A Stuart-Maxwell test was performed to test the marginal homogeneity of credit access between the two periods. Findings indicate a statistically significant difference between access to credit before and after displacement at 5% level $\chi^2(2, N = 248) = 17.15, p < 0.001$. To reaffirm the findings further, the study carried out a McNemar's test excluding respondents who were not sure. The results show that displacement had a significant consequence at 5% level on credit access $\chi^2(1, N = 189) = 6.05, p = 0.0139$ which again corroborates findings by Barbelet (2017). It may, therefore, be concluded that displacement led to the marginalisation of the displaced in credit access terms, thus being in line with Cernea (1995a; 1997a).

b) Denied Supply and or Lost Customers

A one-sided sign test was performed to determine whether households have lost customers or supplies of goods just before displacement or after displacement. Findings indicate a significant loss of several customers and loss of supplies of goods, at a 5% level of significance, $p < 0.001$ for both cases. This, therefore, means that there was marginalisation of the displaced both just a year before displacement and a year after displacement.

However, for the supplies of goods for purposes of reselling, this was not the case. The findings show that those who bought for selling purposes were not denied credit. This is because they bought on a cash basis in areas like Mutare, Birchenough Bridge and at times in Chipinge. Thus, issues of credit access and supplies were not really of concern at all for them. Thus, the sign test finding was statistically insignificant ($p > 0.05$), implying rejection of loss of credit at 5% level of significance.

Displacement led to the marginalisation of the families as indicated by the findings from the Stuart-Maxwell test, McNemar's test and the sign test for customers and the supply of goods for consumption. Of the four marginalisation variables, only one rejected the hypothesis that people are marginalised, thus based on the majority rule, one can conclude that marginalisation is present. Although mining-induced displacement is argued to improve lives for the majority of a nation's people, this study has found that it leads to the marginalisation of the displaced people. For instance, denying somebody credit is tantamount to letting the affected person to live below their potential because credit enhances lifestyle by increasing current consumption.

On the whole, the findings on marginalisation are in line with the arguments posed by Cernea (1996a) that a designated area may lead people to lose their trade links and credit access. The same will happen in the new location where individuals will not access credit because of lack of credit ratings and or trust from the potential financiers. Being denied credit among IDPs has been proven to hold since the displaced individuals lost their customers and credit also noted by Reddy (2000) and Megento (2013). Again, marginalisation, according to Cernea (2000), also has social effects. The displacees are viewed as strangers in the new area. In Arda Transau, these displacees' area has been collectively nicknamed *kumaChaina* which means the area for the Chinese. This connotes a social status different from those who were in the area before the

coming of the displaced which is a form of social marginalisation. Therefore, Cernea (2000, p.6) noted that “[e]conomic marginalization is often accompanied by social and physiological marginalization...”.

Sachikonye (2003b) has shown that marginalisation also existed among the FTLRP displaced in Zimbabwe. The author states that government discriminated against migrant-worker descendants of foreign origins such as Malawians, Zambians and Mozambicans in the allocation of land. All in all, the results of the current study are not unusual because they are in line with previous authors who studied development-induced displacement.

iv. Landlessness

Landlessness in this study was covered by two concepts, one relating to size of land owned and the other to the productivity of that land. In most of the previous studies, for instance, Cernea (1997a; 1997b), the aspect of land productivity was mostly left out but the current study argues that land size on its own is not a good measure of landlessness. The reason behind the inclusion of productivity is that one may have a large piece of land that is not productive. This person from previous studies would be regarded as having land hence not landless while another with a small piece of land that is productive will be considered landless. However, when one considers economic consequences, the size and quality of that land are very important hence the inclusion of the productivity variable. Again, Sen (1962) noted that there is an inverse relationship between plot size and productivity. In line with this claim, the land size alone might be a poor measure of landlessness because the small piece might be more productive than a large one. Therefore, this thesis considered both land size and productivity aspects of the land variable to evaluate the landlessness variable.

a) Land Ownership

One of the objectives of the study was to test the hypothesis that there is no change in the landholdings of the displaced. Data gathered revealed that out of the 248 individuals, 98% (244 households) reported having smaller pieces of land while three were not sure. Only one individual indicated having a larger piece of land than before displacement.

Thus, the two-sided sign test applied revealed a significant reduction in landholdings $p < 0.001$. These findings confirmed arguments posited by existing literature that once displaced, the displacees become landless because they are given smaller pieces of land in the host place (Cernea, 1997a; 1997b; 2000; 2003). In line with this Mburugu (1994) established that landholdings dropped when people were displaced to pave way for Kenya's Kiambere Hydropower project. Again, the FTLRP in Zimbabwe also led to landlessness among the displaced commercial farmers and farm workers (Sachinkonye, 2003b; Fox, Chigumira & Rowntee, 2007; Magaramombe, 2010).

b) Land Productivity

The other variant of landlessness, land productivity, revealed that 56% (140) of the households indicated that the new place is more productive while 40% (100 respondents) concurred that the previous land was more productive. Only 8 households were not sure of the difference. A two-sided sign test was carried out to evaluate whether the two locations have different land qualities as measured by fertility or productivity. Findings indicate that there is a statistically significant difference between the two areas with the current area being more productive than the previous one ($p = 0.0117$). Therefore, the hypothesis that land productivity is the same between the two locations was rejected. These findings may mean that according to this concept households are not that landless.

Therefore, for the landlessness variable, findings from the study indicate that land ownership has been reduced by displacement while the small pieces of land are more productive than the previous big ones. The conclusions from the findings can, therefore, be two-fold. One version is that families are landless. This conclusion is based on the fact that families indicated that land size has fallen and also emphasised the fact that the new location is productive if and only if necessary inputs like fertilisers are used of which the IDPs in Arda Transau cannot afford that. The previous location (Chiadzwa) was productive only if rains are favourable in a particular year and most households used organic manure. In the current location, the climate is more favourable for agriculture and the land is relatively fertile hence productivity depends more on inputs availability. However, given the low incomes the families get in the new location (as revealed in the next subsequent section of the thesis), they, therefore, cannot afford to buy the required

inputs thereby leading to reduced production. Therefore, the findings of the thesis can be considered to be in line with findings by Madebwe, Madebwe and Mavusa (2011) where it was argued that 90% of the Chiadzwa displacees miss their previously owned arable land. The basis of missing the arable land may, therefore, be attributed to the IDPs' perception that the previous land is somewhat better than the one in the current location.

These findings on landlessness imply that the families have been decapitalised. Although erratic rainfall was common in Chiadzwa, the residents also relied on larger pieces of land. Decapitalisation as a result of displacement even extends into the IDPs gardening which they used to carry out along the Odzi River where some used to grow vegetables and sugar cane on small-scale for sale. This activity supplemented their incomes. In the new location, some residents, especially those displaced by Anjin and part of Jin An, have to pay for water at a rate of US\$10 per month (as at the time of data gathering). This is a high cost which the residents could not afford and therefore, they may go for months without water. This exacerbates their failure to undertake gardening that may supplement their low incomes which were not anywhere closer to US\$100 a month (a result also presented in the next subsequent section). Thus, these findings are again in line with those found by Cernea (1997a, 2000) where he argues that making people landless is tantamount to decapitalising them. That IDPs could not afford to pay for some services was also found in Mozambique where resettled disaster-induced displacees could not afford electricity (Arnall, Thomas, Twyman & Liverman, 2013).

With Africa having an average of 1.6 hectares of land per smallholder farmer (Kadapatti & Bagalkoti, 2014), the IDPs in Arda Transau may not be considered to have lost out too much in comparative terms. One may argue that IDPs in Arda Transau are within range of landholdings as far as African smallholder farmers are concerned. With this version again comes land productivity. Given the IDPs have acknowledged that the land is more productive, it may be argued that they have gained. Along this line of argument, Carletto, Savastano and Zezza (2013), Kadapatti and Bagalkoti (2014) and von Braun and Mirzabaev (2015) indicate that smallholder farmers are usually more productive, in terms of output per hectare or acre, than larger ones thus confirming the inverse relationship between productivity and farm size as propounded by Sen (1962). Therefore, the reduced land size may be a blessing in disguise in that the small size farms

the IDPs now own, if used to maximum, might lead to high returns with even excess for sale thereby improving household food security status. Also, from a sustainability perspective, it may be argued that smaller sized farms are more sustainable than large ones (D' Souza & Ikerd, 1996).

Von Braun and Mirzabaev (2015) highlighted that using only the area size for identifying whether a farm is large or small is likely to be erroneous. This study, therefore, concurs with von Braun and Mirzabaev (2015) in that using land size as a guiding principle to conclude on whether a household is landless or not is not enough. More must be done in terms of quality of land now occupied by IDPs. If the small land is more productive than the large one, concluding that there is landlessness is making an error. However, other factors need to be taken into consideration to conclude cases where land has been lost but the land now owned is more productive than the previously owned land.

Finally, the thesis concludes that households are landless because the IDPs lack resources especially capital equipment not because they lost land. Cernea (2000, p.3663) also noted that "[u]nless the land basis of people's productive systems is reconstructed elsewhere, or replaced with steady income-generating employment, landlessness sets in and the affected families become impoverished". Therefore, if households had, say the capital, to engage in intensive agriculture and install irrigation systems, landlessness may not have been considered a consequence of displacement or it may not have been there in Arda Transau; instead, households would have gained from displacement. Given the piped water supply in some areas like Anjin and parts of Jin An, households would have ceased to rely on rain-fed agriculture. They would have even been doing market gardening given that the market for the output is now near, that is Mutare. All in all, despite having conceded to the call by Cernea (1995a; 2000; 2008) that compensation for landlessness must be land for land, the responsible authorities failed to take heed of the qualified statement that land for land compensation does not work alone, it also needs technical support. This, therefore, led the thesis to conclude that IDPs in Arda Transau may be considered landless as previously argued by Cernea (1995a; 1997a). Sachikonye (2004) also found that landless was rampant among IDPs of the FTLRP in Zimbabwe.

iv. Income and savings

In this study, income was defined as any income from any source, be it earned or retirement benefits as in Moreira and Padrao (2004). Again, the generally accepted economics definition of savings, where savings are defined as the excess of income over what has been consumed, applies in this thesis also. Intertemporal choice literature argues that savings enhance income thereby raising future levels of consumption. With that in mind, it means that savings and income are very important elements in household consumption determination.

On the distribution of income, findings indicate that 220 (89%) households earned less than US\$100 per month. Of these, 59% (130) were male-headed while 41% (90) were female-headed households. The 130 households, in the male category, constitute 87% of the male population studied. In the female category, 92% belonged to the group earning less than US\$100 per month.

On the income comparison variable, findings in Table 4.9 indicate that about 96% (238) of the interviewees earned less than what they earned before displacement. Ninety-five (about 40%) of the 238 households earning less than what they earned before are females whilst 143 (about 60%) are males. Again, 238 households reported having a reduced income while 4 and 6 reported having income remaining constant and increased, respectively.

Income and savings comparison data was recorded as categorical data and the results are reported in Table 4.9. On savings, 213 (86%) households showed that their savings have reduced as compared to the previous period, while 29 (12%) indicated that savings increased and only 6 (2%) indicated that savings remained the same.

Table 4.9: Savings and Income Changes Analysis

Gender	Saving			Income		
	Reduce	Remained the same	Increased	Reduced	Remained the same	Increased
Male	126	2	22	143	2	5
Female	87	4	7	95	2	1
Total	213	6	29	238	4	6

To test the hypothesis that income reduces when a household is displaced, the study used a one-sided sign test. The one-sided test results show that household income has significantly fallen $p < 0.001$. Congruent with these findings are the findings by Amirthalingam and Lakshman (2009) who found that after displacement incomes of displacees reduced in Sri Lanka and Mburugu (1994) who also established that after displacement household income fell in Kenya. In Zimbabwe, Sachikonye (2003b) found that FTLRP displacements led to the loss of regular income among the displacees.

Also, the findings in this thesis seem to be in line with the predictions of the resettlers' income curve by Cernea (1995a). The curve predicts that at the onset of displacement, income reduces suddenly and flattens during the transition or adjustment period. Income will start to rise later but will not catch up with that of the non-displaced counterparts if no strong intervention is made. In this study, however, further discussions with the respondents indicated that since the time of displacement, family income has not started to rise as predicted by the income curve by Cernea thereby giving a possibility that households are still in the adjustment phase. These findings are also complementing those on the loss of employment. When one loses their employment, be it permanent or self-employment, they are highly likely to lose income. Thus, the loss of employment can again be argued to have been confirmed by loss in income. Also, the element of decapitalisation has been found by having lower income compared to the previous area.

Literature has it that displacement has gendered effects. Therefore, a chi-squared test was used to evaluate income differences between male- and female-headed households before and after displacement. Results show no significant differences, at a 5% level of significance, between the incomes earned by male- and female-headed households $\chi^2(2, N = 248) = 1.5105, p = 0.47$. Therefore, findings seem to suggest that income was equally affected by displacement for both males- and female-headed households. These results seem plausible because the major source of income in the previous location is the same. By being displaced, both males and females were equally affected in monetary terms. So the hypothesis that females are affected more by displacement than males failed to be accepted from the income variable. Thus, the findings could not confirm the argument that female-headed households are the most vulnerable group compared to male-headed ones affected by displacement at least as far as income is concerned,

contrary to findings by Hoshour and Kalafuti (2007) and in Zimbabwe by Mutopo (2011). The reason, as alluded to before, maybe emanating from the fact that the major source of income, such as farming and petty-trading, for the two categories of displacees was the same. Thus, there is no basis for discrepancies.

To test the hypothesis of changes in savings between the two periods, a sign test was used and findings failed to accept the hypothesis of no change in savings in the two periods since the calculated p-value is less than 1%, $p < 0.001$. This is significant at 5% level hence accepting the alternative hypothesis that savings reduce when households are displaced. Again, these findings seem to corroborate those on income where the results show a reduction in income after displacement. Once income falls, saving is expected to fall, *ceteris paribus*. This is following the propensity to consume concept where low-income households tend to have higher propensities to consume. Also, based on needs, one prioritizes immediate consumption and only thinks of the future when the current is satisfied. It is pointless for someone to forego current consumption and starve but it makes sense if the household is above the subsistence level of consumption to save in return for interest. Research findings already reported in this thesis have shown that families are somewhat food insecure, hence they need first to satisfy the current food needs before thinking of saving for tomorrow.

A chi-squared test of independence was also performed to evaluate if there are significant differences between changes in savings in male- and female-headed families. The results could not find significant differences, at 5% level, between savings among male- and female-headed households $\chi^2(2, N = 248) = 4.8773, p = 0.087$. It may be plausible to conclude that males' and females' savings have been equally affected by displacement thereby seemingly refuting the assertion that displacement consequences are gendered with females bearing a heavier burden.

v. Quality of Amenities

To test the effect of displacement on quality of amenities, the binomial sign test and chi-squared test of independence were used. A binomial sign test was used to test, from IDPs' perspective, the hypothesis that there is no significant difference between amenities' quality in the two

locations. Amenities considered include school, water, transport and health facility, which is the clinic.

For the school and health facilities, the findings rejected the hypothesis that there is no difference. The two-sided sign test showed that there is a statistically significant difference in school quality between the two areas $p = 0.0472$. This indicates a significant reduction in the quality of education, as perceived by study participants. What is surprising is that the majority of the teachers teaching at the school taught in the previous area, meaning they were equally displaced. Upon further probing the parents argued that the school built as well as Wellington school are overcrowded and this affects quality, which is the basis of their argument to regard the quality as lower than in the previous area.

A total of 102 (41%) respondents argued for the reduction of quality of clinic services against 73 (about 29%) who indicated that the quality is better and another 73 who indicated no difference. Thus, on the clinic variable, a p-value of 0.034 revealed that the clinic is offering a lower quality of service compared to that in the previous area. For the quality of water, a total of 76 (about 31%) indicated an increase in perceived quality of water while 95 (38%) viewed water quality to be lower than in Chiadzwa. However, 77 (about 31%) were indifferent. The two-sided sign test revealed no significant differences between the qualities of water in the two areas ($p > 0.05$). The findings can be considered to hold because in the previous area, the residents got water from community boreholes and some are still getting water from community boreholes in Arda Transau, for instance, those in DMC and Mbada diamond areas. Additionally, some are getting piped water which is treated and can be considered safe for drinking purposes. These findings are, however, contrary to the Cagoco-Guiam (2013) argument that displacees suffer from the lack of access to safe drinking water. The argument by Cagoco-Guiam (2013) may be based on the fact that displacees are usually placed far away from areas with safe water to drink. Given the circumstances in Arda Transau, this could not be valid as argued above.

On the aspect of transport, the study found out that 221 (89%) respondents view the quality of transport being better in Arda Transau than in Chiadzwa. This translated to a statistically significant finding indicating better transport quality $p < 0.001$. These results are in line with discussions made with residents as some indicated that transport providers can even be called to

fetch these IDPs from their homes. Others indicated that transport to and from town passes by their gates. This shows that the residents can travel to and from town easily than in the previous area. Thus transport-wise, the residents are better in Arda Transau than in Chiadzwa with a shorter distance travelled to and from town coupled with the better quality transport system and better roads. Consistent with these findings are the findings by Cernea and Schmidt-Soltau (2003) and Vanclay (2017) who noted that in some instances IDPs may benefit from displacement.

A chi-squared test was used to compare the perceptions of quality of amenities between pre-and post-displacement eras among male- and female-headed households. In this study, those respondents who showed indifference between the two qualities were considered to be of the view that the amenities' quality is the same in the two places. This group comprised of a relatively small number with a maximum of thirteen for quality of the medical facility. Thus, a two by three contingency table was used in testing the hypothesis that displacement did not affect the quality of amenities accessed by the residents. The chi-square test of independence showed an insignificant relationship between perceptions of quality of school among male- and female-headed households $\chi^2(2, N = 248) = 2.0424, p = 0.360$. This implies that both males and females view the quality of schools being the same across the two places. This result fails to reject the null hypothesis that males and females face different consequences of displacement, at least on education quality. This implies that the consequence of displacement as far as school quality is concerned is independent of gender.

For the quality of the medical facility, which is a clinic in this case, the chi-squared test used revealed statistically significant differences in perceptions of the quality of the clinic services among male-headed and female-headed households $\chi^2(3, N = 248) = 9.318, p = 0.025$. Further investigations revealed that more males indicated that the quality of services offered by the clinic is lower in Arda Transau than what they got in Chiadzwa. These results complement findings of the sign test that quality of services is lower in the current location than in the pre-displacement area.

To test whether there is a difference in perception on quality of water between male-headed and female-headed households, a chi-squared test was also used. The findings from the study indicate

that $\chi^2(3, N = 248) = 9.5261, p = 0.023$ which shows that male-headed and female-headed households view the quality of water differently in the current area compared to the previous area. More males believe that the quality of water in Arda Transau is better than that in Chiadzwa. However, overall the quality of water was found to be the same as perceived by the whole population since the sign test, already presented, confirmed so.

On transport, the study found that the quality of and access to transport is better in Arda Transau than in Chiadzwa. To test whether this can be disaggregated according to gender, the study used a chi-squared test. The results revealed that there is no statistically significant difference between male-headed and female-headed households' perceptions of transport access, $\chi^2(2, N = 248) = 0.9498, p = 0.622$ which implies that both male-headed and female-headed households unanimously agree that the quality of transport is better in the current area than in pre-displacement location.

vi. Common Property Resources

The common property resource variable was divided into three components which are access to common grazing land, grazing land quality and access to common forested land. These three components were all measured using a categorical scale on a yes, not sure and no basis. From an economics perspective, this variable, especially the access construct, was viewed as a good which is rival but non-excludable in consumption.

a) Common Grazing Land

The interviews revealed that out of the 248 respondents, 52 (21%) stated that displacement did not affect their access to common grazing land, while 175 (71%) indicated that access was affected negatively. Only 21 (8%) respondents indicated that they were not sure whether access to common resource changed. To test whether there is a significant difference in access to common grazing land in pre-and post-displacement areas, a two-sided binomial sign test was applied. The results revealed a significant difference between access to common grazing land in the two areas $p < 0.001$. Since the number of those who reported having lost grazing land was found to be almost three times those that reported no change, these findings seem to confirm a

statistically significant reduction in access to common grazing land $p < 0.001$. These findings may then justify the reason why the displacees were advised to reduce the number of animals owned. Though being viewed adversely by displacees, this was a somewhat wise advice because the companies knew well that Arda Transau has no adequate land for animal husbandry. Thus, it is plausible to suggest that those responsible for the displacement may have perceived the possibility of the tragedy of the commons as propounded by Hardin (1968) since property rights to grazing land in most rural areas in Zimbabwe are not well defined.

b) Quality of grazing land

The quality of grazing land was considered important because it contributes to animal quality and quantity. The quality of these animals enhances family income. An area that provides poor quality grazing grass is likely to yield poor quality animals that will result in farmers getting low prices for their animals on the market.

The results revealed that only 35 households believe that the quality of the grass is the same in the two areas. However, 154 study participants indicated that the quality of grass in Arda Transau is lower than that in Chiadzwa, while 59 revealed the opposite. Given such information, a sign test was applied and the results indicate that the quality of grazing grass is better in Chiadzwa than in Arda Transau $p < 0.001$. One of the major aspects noted by households is that their goats do not find the area favourable and, hence, are dying. The high death rate of goats may also be attributed to the climate in Arda Transau which may not favour goats as compared to that in Chiadzwa. For cattle, it was argued to be almost the same as in Chiadzwa. Hence cattle are mostly affected by access to grazing land not the quality of grass.

These findings complement those found on access to common grazing land. Since a significant number of households indicated reduced access to common grazing land and also that quality of the grass is not favourable in the new area, it means that households have lost significantly in terms of grazing land. Thus, the reliance on animals for complementing income cannot help in Arda Transau since the animals have no grazing space.

c) Access to Common Forested Land

An overwhelming proportion of respondents amounting to 85% (212) indicated having lost access to common forested land. Only 22 (9%) could not tell whether access to common forested land had changed while 14 (6%) indicated no change at all. To test the hypothesis on whether households have lost common forested land, a two-sided sign test was also used and findings show that $p < 0.001$ which indicates a significant difference in access to common forested land in the two areas. These findings indicate that households have lost their capacity to use forested land for complementing food items, income and even for household uses such as firewood.

From the view of the uses the households made of trees, interviewed households indicated a loss of income from selling items like mats made from baobab tree fibres. Thus, this seems plausible since they argued that some of their major sources of income in Chiadzwa were mat weaving, basket weaving and selling of indigenous fruits such as baobabs. All these are found in commonly owned forests. Such a finding indicating a significant loss in terms of access to common forested land is a good reason for the loss of income incurred by IDPs in Arda Transau in line with Cernea (1997a).

In this thesis, it can also be deduced that displacees relied heavily on the external environment before displacement for their survival. Perhaps this conclusion may be found to be valid when one considers all aspects of common property. The three aspects have unanimously shown a significant loss hence the conclusion that households have lost common property which is an economic good that enhances household welfare. These findings may be considered to be in line with the assertions by Cernea (1997a; 2000) and World Bank (2012) that loss of common property exerts pressure on the loss of income and livelihoods since most rural households depend on common property resources for their livelihoods.

vii. Social Disintegration/Disarticulation

Social disarticulation cannot be ruled out in the study area. Discussions with IDPs showed that their relatives have either been left behind or migrated to other areas. This separation led to social capital loss. The effects of social capital losses are many ranging from family disintegration to psychological problems. One interviewee (name withheld) indicated that he has

to make frequent visits to his mother who was still in Chiadzwa. These movements exert financial pressure on the family due to transport costs among other costs. Thus, loss of social capital results in loss of production since, for instance, in the case of the aforementioned IDP, productive time is lost trying to keep relationships in place. Also since social capital complements other productive assets, it means loss of social capital is a hindrance to production. Therefore, it can be concluded that MIDR also leads to social capital loss just like other forms of displacement as espoused by Cernea (1997a). That migration affects social capital has also been noted by Coleman (1988). Therefore, the findings in this study are in line with existing literature.

Conclusively, results on categorically measured variables indicate significant losses related to land, employment status and income. It can, therefore, be safely concluded that, from the categorically measured variables, displacement made households worse off than before. The next part presents results from continuous variables.

4.2.3.2 Results on Count and Continuous Variables

Given the results from the Shapiro-Wilk's normality test for continuous and count variables, the paired t-test was ruled out in favour of the non-parametric counterpart, the Wilcoxon signed-rank test. The Wilcoxon signed-rank test was thus used to explore the effects of displacement on animal ownership and distance travelled to access social amenities in pre-and post-displacement periods. Animals are a significant source of livelihoods among the Arda Transau IDPs as noted by Katsaura (2010) who noted that before displacement the IDPs used to rely on animal husbandry. The null hypotheses tested are that animal ownership or distance travelled to certain amenities and nearest town (Mutare) did not change due to displacement. The results on animals owned and distances travelled are presented in Table 4.10. According to Table 4.10, the p-values for goats, cattle, sheep, chickens, distance to school and distance to water sources are all less than 0.05. This does not accept the null hypothesis that the median differences are equal to zero. So displacement led to statistically significant loss of animals, namely goats, cattle, sheep and chickens as well as a reduction in median distances travelled to school and water source. Loss of animals is evident since before displacement; households were advised not to take their animals along with them to Arda Transau. Therefore, only fewer animals were brought while some were

sold just before displacement. Incidents of animal deaths along the way were also evidenced but only one household reported so.

The results on the loss of animals are in line with those found by Mburugu (1994) who established that Kiambere Hydropower project in Kenya has led to animal losses summing to a minimum of a third of previous ownership. The results are also in line with the 21% loss in cattle experienced by displacees in Philippines (Cagoco-Guiam; 2013). Again, the results in Table 4.10 statistically confirm the results on losses reported in Table 4.2.

Table 4.10: Wilcoxon Signed Rank Test Results

Variable (Before minus After)	Z-score	P-value	Decision ($\alpha = 0.05$)	Conclusion
Goats	2.730	0.0063	Reject H ₀	Reduced
Cattle	4.975	0.000	Reject H ₀	Reduced
Sheep	4.242	0.000	Reject H ₀	Reduced
Chickens	4.120	0.000	Reject H ₀	Reduced
Pigs	1.414	0.1573	Accept H ₀	No significant difference
Distance to school	2.754	0.0059	Reject H ₀	Reduced
Distance to the clinic	1.504	0.1327	Accept H ₀	No statistical significance
Distance to a water source	3.835	0.0001	Reject H ₀	Reduced
Distance to town	-0.258	0.7960	Reject H ₀	Reduced

For pigs owned, distance to the nearest clinic and distance to town, the null hypothesis could not be rejected. Thus, there is no significant difference between the pre- and post-displacement number of pigs owned and distances travelled to the nearest clinic. Based on the evidence gathered the study failed to conclude that displacement led to a decrease in the number of pigs owned as argued by literature that when displaced, households lose their animals. The possible justification for this conclusion is that most of the residents in the area are of the apostolic sect, by the name Johane Marange, which does not allow its members to keep pigs or eat pork. Therefore, very few households keep these pigs in the area. Also, the evidence from findings in Table 4.10 cannot lead to the conclusion that the households are placed far away from the clinic and town. This can be argued to be so since a clinic has been built within the vicinity of these areas. However, only one clinic was built in the area occupied by IDPs displaced by Anjin Corporation. Though being the only one, the clinic is even closer to the residents than in the previous area, (mean distance of 5.8 km versus 2.1 km, in old and new locations respectively).

Again, distance travelled to town reduced which can be interpreted as a gain since households can now access several needs nearer than before for instance, should there be a need for medical attention requiring a hospital, they can get to the provincial hospital in Mutare urban. This represents a gain as also noted by Cernea and Schimdt-Soltau (2003) and Vanclay (2017).

4.2.3.3 Other Economic Consequences

Families were further asked to state whether they were willing to stay in Arda Transau if given an option. The findings indicate that almost half (48%) of the respondents were willing to stay in Arda Transau compared to migrating to other places. To determine whether this willingness to stay depends on gender, a chi-squared test of independence was used and findings showed that there is no significant difference between the two, $\chi^2(1, N = 248) = 0.2639, p = 0.607$. One of the major reason for not being willing to relocate, as revealed from discussions with study participants, was that income was a restraint and also the need to be around familiar neighbours, thus, keeping social capital intact. Social capital is enhanced in the current location since families were placed closer to their neighbours in Chiadzwa, although without due recognition of previous proximities. Thus, being within the vicinity of their neighbours enable IDPs to keep their ties in place thus enhancing social capital.

A small proportion (25%) of respondents indicated that some school-going members of the family left school after displacement. This may be concluded as implying that despite being displaced most families have managed to continue sending their children to school. They seem to still prioritise schooling of their children despite facing food problems, reduced income and other consequences discussed in the study. The understanding of the households may be that one day these children will fend for the family once they get a good job because of the to-be gained skills, a result consistent with that by Scudder (1985) on the Gezira scheme.

One of the major costs of displacement to the displacees, for example, those displaced by Anjin, is that they are now required to pay for water. Before displacement households were told that they will not pay for water since they have been getting water for free in Chiadzwa. In Arda Transau, they are supposed to pay water bills. Failure to pay the relevant bills results in water cuts. Also in Chiadzwa, the majority of the displacees had sunk their deep wells thereby giving them free access to water and at will. In the current location, in locations like Anjin especially, where water is piped to each residential stand, the water is erratic despite being paid for.

Additionally, some families especially those displaced by Mbada Diamonds were complaining about borehole water. The water from some boreholes is said to be rusty thereby subjecting households to health problems. The majority of the households have noted this with concern to such an extent that they are no longer using the boreholes drilled for them but opt to find water elsewhere. Also, these boreholes are community ones unlike in Chiadzwa where the majority-owned their wells. The finding that households lost boreholes due to displacement is in line with Madebwe, Madebwe and Mavusa (2011) who established that 50% of the displacees have lost boreholes.

Despite having lost animals due to displacement, households indicated that they are still facing continued animal losses. Some of their animals are run over by trains while others are trapped, especially cattle, by “poachers”. As if that is not enough, stock theft was also rampant in the area thereby implying that the animals were no longer as secure as they were in Chiadzwa. Kusena (2015) also found that stock theft was a problem in Arda Transua. In line with needs, Maslow (1943) and Doyal and Gough (1991) identified safety as a need. To this end, one may add not only the safety of the person concerned but their property and assets as well. Also, some families

now have to travel far to get water for the remaining animals particularly cattle which they take to Odzi River.

Failure by companies to own up their promises to the households has also caused misery to the displacees. The companies promised employment for the youth whose families have been displaced. Again, food hampers were also promised. These have not been met until the companies have been merged into ZCDC. Some companies have also promised to provide tarred roads but have not done so, for instance, Mbada Diamonds and Diamond Mining Company. These promises all sum up to killing expectations of displaced individuals thereby worsening their livelihood.

The other consequence experienced is over-crowdedness. The situation in Arda Transau homes cannot be referred to as homelessness in the sense of Cernea's Impoverishment Risks and Reconstruction model. However, the displacees may assume so because of the arrangement. An instance is where some men were given the three bed-roomed houses and asked to share with married sons and married grandsons. Additionally, a certain man who had many wives was given several kitchens surrounding the four-roomed house. He, however, declined the offer and up to the time of interviews, was said to be residing in some areas surrounding the location. Such scenarios lead to households arguing that the living conditions in the current place are not that favourable for them. For those with smaller families who happen to be the majority, it is, however, not a problem. Additionally, Chirasika Primary School, built by Anjin, is overcrowded resulting in hot-sitting⁴ being introduced. This is meant to accommodate all pupils in the area. Again, the nearby Wellington Primary School is equally overwhelmed with enrolments.

Some families indicated that they feel insecure in the current area. One such reason is that they do not have the titles to the houses they are occupying. They argue that there is a need for title deeds to the pieces of land they are residing on and the houses. With nothing to that effect, they fear that they may again be displaced in future thereby affecting the safety needs by Maslow (1943). The other insecurity is emanating from the houses themselves. Some houses have cracks such that the families do not know for how long they will be in them without being required to

⁴ Hot sitting is a model whereby some learners come to school say after break time or lunch when others are about to dismiss.

repair or being harmed by the houses. The fear is that should the current low levels of income and economic activities in the area continue, they may not be able to raise money for repairs. Some houses already have leaking roofs. This leads to anxiety especially during rain seasons which may cause loss of property such as furniture. This anxiety may lead to psychological disorders, which worsens one's life.

4.3 Discussion

This Chapter presented findings from the study which revealed that IDPs have suffered several consequences from displacement such as loss of employment, food insecurity and marginalisation (Cernea, 1995a; 1997a). In the study, the Stuart-Maxwell test, McNemar's test, Wilcoxon and sign tests were employed as analysis methods. Therefore, mining-induced displacement has significant consequences as do other displacements. It is also imperative for one to understand that economists' views are equally necessary for resettlement studies as reflected in these results.

Several conclusions can be derived from this study. Firstly, the study found that the consequences from mining-induced internal displacement that have been largely ignored in literature are equally disastrous since Arda Transau residents have not been spared. It was established that though the land in Arda Transau is more fertile than that in Chiadzwa, the IDPs suffer from food insecurity since land size has significantly reduced and IDPs cannot afford to buy the inputs required by the soil to militate against food insecurity. Thus, from the perspective of Frankenberger (1996), these households are in absolute poverty because they could not meet their food needs. Again, in line with Cernea (1997a), the IDPs have been decapitalised because they lost land which is a key source of livelihood.

The findings also indicate loss of employment experienced by the IDPs. To this extent it can be concluded that displacement led individuals even to lose the skills derived from the self-employment they were engaged in when in Chiadzwa, including basket- and mat-weaving skills. This loss of knowledge has been necessitated by the absence of the inputs required such as baobab trees. Contrastingly, the IDPs are now closer to Mutare town where they could sell their products if they could access the inputs. This, therefore, has contributed to the loss of income and also savings. A similar incident where migrants could not use their skills is that of Central

African Republic (C.A.R) refugees in Cameroon (Barbelet, 2017) and IDPs in Diffa region of Niger (International Organization for Migration, 2018) who reported that IDPs' former activities were no longer feasible because they lost the means for employing these activities.

Another important conclusion derived from this study is that IDPs have lost animals due to displacement. These animals used to be a source of their fall-back-on in times of need. Thus, in times of need, the individuals used to sell their animals to supplement their income. For instance, households used to sell animals to buy food in times of crop failure. They also used these animals as a source of manure to enhance their harvest. Coupled with a smaller land size and employment loss, this loss of animals exacerbates the food insecurity problem experienced by these IDPs.

Of note also is the finding that IDPs are relatively closer to most social amenities such as Chirasika and Wellington Primary Schools as well as a provincial hospital in Mutare town. Also being closer to town improves access to the market for their products and inputs. These were considered as positive consequences since they have the potential to improve IDPs' welfare. This is similar to the findings by Cernea and Schmidt-Soltau (2003), Gebre (2014) and Vanclay (2017). These all concluded that displacement may have benefits to the displaced people.

The fact that household incomes were way below the poverty datum line of a household of five members is an indication of the extent of the immiseration. On average, household income in Arda Transau was below US\$100, while the average total consumption poverty line for five people in Manicaland was US\$448. This gap, on its own, indicates that income loss is a reality among IDPs in Arda Transau. The loss of income has potential implications on other economic variables like marginalisation and food insecurity.

4.4 Chapter Summary

The chapter presented findings on the economic consequences of mining-induced displacement. In brief, findings indicate significant losses having been suffered by IDPs. The possible connections among these consequences worsen the situation, for instance, landlessness leads to reduced economic activity for land-dependent households. This has the potential to reduce income which again affects food security. The next chapter presents findings on coping strategies

used by IDPs in the new site. The connection between chapters four and five can also be traced to the household triangle of capabilities, assets and economic activities. De Vriese (2006) noted that the loss of capabilities and assets because of relocation leads to changes in economic activities. Therefore, the losses reported in Chapter Four are likely to lead to changes in economic activities reported in Chapter Five.

CHAPTER FIVE: DETERMINANTS OF CHOICE OF ECONOMIC ACTIVITIES AMONG IDPs IN ARDA TRANSAU

5.1 Introduction

The various consequences of displacement have been outlined in Chapter Four. In that chapter, it was established that households lost some of their livelihoods activities. They, therefore, may be forced to change their economic activities after displacement. Therefore, in this chapter, findings on the determinants of the choice of economic activities are presented. Tables were used to summarise findings starting with descriptive statistics. For descriptive statistics, the main statistic used for analysis is the mode. Two main methods were employed in results analysis *viz* multinomial logit for determinants of main economic activity and ordered logit for determinants of diversified agricultural activities with associated odds for each method. The livelihood activities used in this study were identified from existing literature on livelihood activities among IDPs as well as the pilot survey.

The chapter is organised as follows: Section 5.2 presents summary statistics followed by 5.3 which presents diagnostic tests results. Furthermore, Section 5.4 presents the study findings while Section 5.5 discusses the findings. Lastly, a conclusion is made in Section 5.6.

5.2 Summary Statistics

To deduce how diversified livelihoods are in agricultural activities terms, the study employed frequency tables. The number of agricultural activities undertaken was recorded. Three major groups of agricultural activities were used *viz*, cash crop farming, livestock production and food crop production. Findings to this effect show that the majority (56%) of households are not diversified since they undertake only one activity. The next most common (38%) number of activities was two where households were involved in two agricultural activities. Four per cent of displacees indicated that they did not engage in any agricultural activities after displacement while only two per cent of the households indicated that they were engaged in all three. Conclusively, 40% of households were found to be diversified since they practised at least two agricultural activities. Table 5.1 shows the number of agricultural activities undertaken by each household by gender.

In Table 5.1, whilst the number of male-headed and female-headed households engaged in only one agricultural activity is almost the same, the proportion differs with a higher proportion of females (69%) compared to males (47%). Also 47% of male-headed households engaged in two agricultural activities, a proportion that is equal to that of those who engaged in one activity only. For those who diversified by engaging in only two activities, 74% are male-headed while 26% are female-headed households.

Table 5.1: Agricultural Diversification by Gender

Number of agricultural activities	Male	Female	Total
0	6	4	10
1	70	68	138
2	70	24	94
3	4	2	6
Total	150	98	248

Table 5.1 also shows that the majority (60%) of those displacees who are not into agriculture are males while almost an equal proportion among males and females engages in only one agricultural activity (51% and 49%, respectively). From the females only sample, 24% diversify by engaging in two activities, a proportion slightly more than half that of males (47%) who engage in the same number. A significant number (49%) of male-headed households engaged in at least two agricultural activities while 27% of women are also diversified in the same manner. It is, therefore, most likely that diversification is associated with being a male-headed household since a percentage difference of 22% indicate that 22% more male-headed households than female-headed ones are diversified.

To determine the main economic activities undertaken by displacees, frequency tables were also employed and this information is shown in Table 5.2 with activities being grouped by gender of

the household head. This was guided by the idea proposed by Jacobsen (2002) that "[d]isplacement can result in new forms of gender ... vulnerability" (Jacobsen, 2002, p. 98). Therefore, different vulnerabilities may lead to different economic activities employed. Findings indicate that slightly above half (53%) of the displacees are engaged in agriculture as the main livelihood activity while 8% depended mostly on employment as their economic activity. This finding confirms the assertion that mostly IDPs engage in agriculture as a livelihood activity (International Organization for Migration, 2018) and that employment is less relied on after displacement (Adeniyi *et al.*, 2016). Again, in rural Zimbabwe most households do not depend on employment but agriculture. Findings to the effect that farming dominates among rural households corroborate those found by Adeniyi *et al.* (2016) in Nigeria. Slightly more than half of the male-headed and that of female-headed households engage in agriculture as a coping strategy (54% and 51%, respectively). From the total sample of households engaged in agriculture as a coping strategy, 62% are male-headed while slightly more than half of that (38%) are female-headed households meaning that about 24% more male-headed than female-headed households engage in farming. Therefore, one may predict that being a male-headed household is more likely to be associated with engaging in agriculture as an economic activity. In short, from Tables 5.1 and 5.2 one may hypothesise that being a male-headed household is more likely associated with being an agriculturally diversified household. This is in line with the findings by Amisi (2006) that there is usually a gender discrepancy between males and females when it comes to economic activities after displacement. Of those who consider employment as their main economic activity, the majority (68%) are male-headed households. Also, Adeniyi *et al.* (2016) found that employment is less used by rural households as a livelihood activity, a finding similar to that of this study.

The least used coping strategy was found to be asset disposal with 4% of displacees using it as the main economic activity. This finding, support asset-based theories of coping, may be as a result of IDPs knowing the long-term consequences of asset disposal, that is, that it may exacerbate their impoverishment. Any other activities, besides the aforementioned, used as coping strategies comprise 17%, a figure slightly less than that for petty trading which was reported to be being used by 19% of IDP households.

Table 5.2: Major Economic Activities by Gender

Economic Activity	Male-headed households (number)	Female-headed households (number)	Total
Employment	13	6	19
Petty Trading	23	23	46
Farming	81	50	131
Asset Disposal	7	2	9
Others	26	17	43
Total	150	98	248

While petty trading as a coping strategy was used by 19% of respondents, 50% of the 19% were males and the remaining 50% being female, thereby indicating no significant difference between males and females using petty-trading. Petty-trading was found to be the next most frequently used strategy among IDPs in Arda Transau with these findings being in line with those by Adeniyi *et al.* (2016) that petty-trading follows behind farming. The result also corroborates those by Magaramombe (2006) among fast-track land reform displacees in Mazowe, Zimbabwe. Again, that petty-trading is prevalent is not unique to this study since Mukwada (2012) also found that in a study among resettled farmers in Zimbabwe and Levron (2013) found the same among women IDPs in Cote D'Ivoire. That petty-trading is common among displacees was also found by Omata (2012) where it was indicated that displacees, refugees, in particular, engaged in a variety of activities including small business activities, such as vending fruits, to sustain themselves. However, for the males only sample, only 15% engaged in petty-trading as the main livelihood activity unlike 23% from the females only sample, thus again seemingly corroborating the assertion that males and females employ different strategies.

5.2.1 Pre- and Post-displacement Main economic Activities Compared

Barbelet (2017) argued that after displacement, skills that IDPs have gained may become obsolete or not relevant. To that effect, this study sought to determine whether households still engage in what they did before displacement. Table 5.3 reports the results of this study on this particular aspect.

Table 5.3: Comparison between Pre-and Post-Displacement Economic Activities

	Economic Activity after Displacement						
		Employment	Petty- Trading	Farming	Asset Disposal	Others	Total
Economic Activity Before Displacement	Employment	10	1	11	1	4	27
	Petty-Trading	7	32	54	2	16	111
	Farming	2	10	46	2	5	65
	Asset Disposal	0	3	12	4	10	29
	Others	0	0	8	0	8	16
	Total	19	46	131	9	43	248

Table 5.3 shows that while 45% (111) of households relied more on petty trading before displacement only 19% (46) do so after displacement. This is justified because the main items they relied on in Chiadzwa are not available in Arda Transau such as selling indigenous fruits like bird plum fruits (*nyii*) and baobabs (*mauyu*). Gardening in Arda Transau is also limited because of space and the need to pay for water bills unlike in Chiadzwa. While agriculture is the mainstay of the Zimbabwean economy, only 26% of families relied on it in Chiadzwa while the number slightly more than doubled (53%) in Arda Transau translating to a percentage difference of 27% which means that 27% more households now rely on agriculture compared to before displacement. In line with this finding again, International Organization for Migration (2018) found that most IDPs in Niger relied on agriculture as an economic activity. The group of people who relied on other activities was the lowest before displacement being a paltry 6% while it

almost tripled to 17% after displacement resulting in an 11% percentage difference. Thus, after displacement, more households found themselves relying more on other activities other than employment, petty-trading, farming and asset disposal. This is similar to a situation where Central African Republic refugees found conditions in Cameroon different from those in their home country hence their experience was no longer useful (Barbelet, 2017). Congolese refugees in Durban were also found in that dilemma where they were then forced to review expectations and had to do 'what is there' for them to survive (Amisi, 2006). The phrase 'what is there' may be relatively taken to mean informal activities with no prescribed definition since each day one does what can give them something to consume.

After combining asset disposal and other economic activities with agricultural activity because the first two had small frequencies (also as a way of complying with results of the test performed later in the study, Table 5.8), a Stuart-Maxwell test was used to test marginal homogeneity between economic activities done before and after displacement. The findings show a statistically significant difference, $\chi^2(2, N = 248) = 52.73, p < 0.001$ between economic activities done before and after displacement, implying that the activities after displacement may be considered as coping strategies in line with the International Organization for Migration (2018) assertion that once a person does new things in the post-displacement era, it can safely be considered a coping strategy.

Besides the main economic activity done by each household, some other coping strategies were used by IDPs. These involve exchanging goods for goods (barter trade), engaging in working in other people's farms (selling labour) especially during the farming season and livestock disposal. Some of the coping strategies used are summarised in Table 5.4. Due to their prevalence of use among IDPs, the two activities (animal disposal and barter trade) have been singled out to find out whether they really can be taken as coping strategies or livelihoods activities as a result of possible changes in their usage between the pre-and post-displacement periods.

In Arda Transau, animal disposal as a coping strategy has become common with 58% of respondents indicating that animal disposal has increased after displacement. This is despite the findings that most IDPs have lost their animals due to displacement as reported in Chapter Four of this thesis. That sale of livestock among IDPs has increased is in line with the sentiments

made by Justino (2012) that animal sales is mostly used by rural households in times of crisis. Also, almost 50% of respondents have increased their degree of barter trade after displacement while 35% and 33%, respectively, indicated a decrease in animal disposal and use of barter trade.

Table 5.4: Animal Disposal and Barter Trade.

Activity usage	Decreased	Remained the same	Increased
Animal Disposal	86 (35)	18 (7)	144 (58)
Barter Trade	83 (33)	42 (17)	123 (50)

Figures in parentheses show percentages.

The McNemar's test was performed to find out if there is a significant difference between those who used livestock sale as a coping strategy before and after displacement. It was found that surely livestock sales increased after displacement implying that this activity can safely be considered as a coping strategy employed after displacement, $\chi^2(1) = 7.12, p = 0.0076$ meaning that animal sales as a coping strategy increased significantly after displacement. However, this approach of survival leads to higher levels of poverty in the future since it leaves households with few assets that they can safely rely on. However, even though these activities are engaged in by some households, very few (4% as reported in Table 5.2) consider asset disposal as the main economic activity after displacement.

Again, the McNemar's test was used to determine if barter trade among IDPs increased after displacement. Results indicate that there is no statistically significant difference in terms of the use of barter as a coping strategy between the pre- and post-displacement periods $\chi^2(1, N = 248) = 2.56, p = 0.1098$. Thus, despite, about 50% of respondents indicating that using barter as an economic activity increased, this was found not to be statistically significantly different from its use in the previous period meaning it cannot be considered a coping strategy *per se*.

5.3 Diagnostic Tests

One of the study's objectives was to explore the determinants of choice of coping strategies and livelihood diversification strategies among the internally displaced persons in Arda Transau. In a bid to attain this broad objective, quantitative analysis of data was used. This study reports odds ratios and p-values and variables are considered significant using the 5% level of significance.

To find the determinants of choice of the main economic activity undertaken by each IDP household, a multinomial logit (MNL) model was applied. Four main economic activities done by IDPs were found, guided by literature on livelihood activities among IDPs and pilot survey, and these activities include survival on employment wages, petty trading, farming and livestock disposal. However, other IDPs do not rely mostly on these activities hence a fifth group was created representing any other activities. Naturally, this kind of data creates a nominal variable indicating the main economic activity undertaken by IDPs. Therefore, the MNL model was used to find the socio-economic determinants of the choice of the main economic activity after displacement. However, before running the MNL model, several diagnostic tests were done such as the likelihood ratio test for possibly combining these categories whose findings indicate that farming, asset disposal and the group representing other activities can be combined into one as reported in Table 5.5.

Table 5.5: LR Test Results for combining Dependent Variable Categories

Categories to be Combined	$\chi^2(8)$	P-value
Employment and Petty-trading	19.28	0.013
Employment and farming	30.505	$p < 0.001$
Employment and Asset Disposal	21.951	0.005
Employment and Others	38.647	$p < 0.001$
Petty-Trading and Farming	17.659	0.24
Petty-trading and Asset Disposal	14.597	0.67
Petty-trading and Others	19.191	0.014
Farming and Asset disposal	7.279	0.507
Farming and Others	8.16	0.418
Asset Disposal and Others	4.945	0.763

From Table 5.5, one can note that three categories, farming, asset disposal and others, can be combined into one category since the p-values are statistically insignificant. A statistically significant p-value implies that categories cannot be combined in the analysis. Therefore, in this study, only three categories can be combined without the loss of important information.

As a post-estimation test for the independence of irrelevant alternatives (IIA) assumption, a Suest-based Hausman test was performed and findings indicate that the IIA was not violated since the obtained chi-square values were all not significant as shown in Table 5.6. Results reported in Table 5.6 are for the IIA assumption test after combining farming, asset disposal and others into one category based on an LR test carried out whose results have been presented in Table 5.5 and interpreted accordingly. The findings for the IIA test are, therefore, reported in Table 5.6.

Table 5.6: Suest-based Hausman test for IIA Assumption

Omitted Category	Chi-square	DF	p-value	Evidence
Employment	0.513	9	1	For H ₀
Petty-trading	-5.980	9	-	For H ₀
Farming	-1.507	9	-	For H ₀

5.4 Results Presentation

With the summary statistics having been presented, the thesis turns to the presentation of study findings. The results are presented in the following order. Section 5.4.1 presents findings on determinants of economic activities while Section 5.4.2 presents those on determinants of agricultural diversification.

5.4.1 Determinants of economic activities choice among IDPs

After combining agriculture, asset disposal and others into one category, collectively named farming, the findings for determinants of economic activities among IDPs in Arda Transau are shown in Table 5.7. From Table 5.7, one can note that economic activity before displacement, the gender of household head and marital status are statistically significant variables.

Table 5.7: Determinants of Economic activities choice

Category	Variable	Relative Risk Ratio (<i>rrr</i>)	z-statistic	p-value
Employment	Age	1.3205	1.15	0.25
	Gender	1.2676	0.37	0.709
	Marital status	2.24015	0.88	0.377
	Household size	0.9912	-0.12	0.905
	Religion	1.0183	0.02	0.983
	Education	1.1105	1	0.319
	Duration	0.7104	-1.36	0.173
	Economic activity before displacement	0.1664	-4.18	0.000
	Constant	4.07482	-0.12	0.904
Petty-Trading	Age	0.9671	-0.22	0.828
	Gender	2.45	2.28	0.022
	Marital status	6.8272	2.79	0.005
	Household size	0.9826	-0.37	0.709
	Religion	0.8918	-0.19	0.853
	Education	0.9716	-0.41	0.681
	Duration	0.9141	-0.64	0.523
	Economic activity before displacement	0.6605	-2.13	0.033
	Constant	0.223	-0.95	0.341
Farming		Base category		

LR chi²(16) = 52.82, Prob Chi² = 0.000

It is reported in Table 5.7 that economic activities that were done by a household before displacement reduces the likelihood of a household to choose employment as a livelihood activity, thus, its relative risk ratio (*rrr*) or odds are 0.1664, with a p-value less than 0.001. The result seems to concur with the sentiments echoed by Scudder (1985) that IDPs tend to be risk-averse, therefore, try to transfer their economic activities to the resettlement area. Again, being a female IDP increases the probability of engaging in petty trading other than farming ($rrr = 2.45, p < 0.05$).

Female-headed households are 2.45 times more likely to be involved in petty-trading relative to farming than the male-headed ones, thereby implying a gender disparity in the use of coping strategies between the two groups (Seguin, 2016). Similar interpretations may be made for marital status where currently married individuals are 6.8272 times more likely to engage in petty trading relative to farming than the non-married household heads. It is imperative to understand that petty-trading has been one of the lucrative activities which the IDPs learnt from Chiadzwa (Nyawo *et al.*, 2012).

To evaluate if female-headed and male-headed households' choice of livelihood strategies depends on different variables, the study used two equations, one for males only and the other for females only. Given economic activities done before displacement, women were found to be 0.06 times less likely to rely significantly on employment as a survival strategy than being in farming $p < 0.05$. However, despite having only one variable found to be individually statistically significant, all variables were jointly found to be statistically significant, ($\chi^2(28, N = 98) = 43.94, p < 0.05$) in the females only model. Equally, male-headed households are 0.2377 times less likely to use employment as a major livelihood activity than farming $p < 0.1$. All variables used in the males only model were, however, found to be jointly statistically significant at 10% level of significance, ($\chi^2(28, N = 150) = 38.39, p < 0.1$).

Other strategies used by households as coping mechanisms include animal disposal. A binary logistic regression was used to find its determinants. No variable among those identified could significantly determine animal disposal. This finding seems sound given that families were

required to dispose of their animals before displacement. In that respect, then only a few households have animals, however, reduced in number because of the aforesaid requirement and also space restrictions. Mostly, animals that were supposed to be disposed of before relocation are cattle and goats such that the animal sale increase reported in Table 5.4 is most likely to be that for small livestock like poultry.

Two other binary logistic regressions were run, one for determinants of dependency on company support and the other for child support. It was found that being in DMC, other than being in other locations, is likely to increase the probability of one once relying on the company that displaced households for survival, odds ratio being 0.5323 and p-value being less than 0.05. This finding is logical since the companies were nominally coded with DMC being one (1) and Anjin being coded five (5) and that most respondents in DMC indicated that they got assistance in terms of food hampers in the first three months after displacement. However, at the time of the study, no such food assistance was still being given to displacees.

Gender was also found to be a significant variable at 5% level with female-headed households being 2.67 times more likely to have relied on company support than male-headed ones indicating gender differences as suggested by Seguin (2016). On the child support variable, only age was found to be a significant variable, with households headed by older members being 2.144 times more likely to get support from children than households headed by relatively young household heads. This seems logical since children may feel more obliged to support households headed by their old aged parents than those still in the active age groups. Some of the households headed by young heads may also be supporting their parents hence no support can be expected from their children since the children will still be young. The fact that IDPs may depend on support from their social networks, such as from children, has also been found by Mukwada (2012) among the most vulnerable land reform beneficiaries in Mufurudzi area of Shamva, Zimbabwe. The finding that children support parents is consistent with the African culture since, in the African culture, children are expected to take care of their parents when the parents get old and are not able to support themselves. The same was found by Barbelet (2017) among C.A.R refugees in Cameroon.

5.4.2 Determinants of Agricultural Diversification

Table 5.3 shows that a significant number (53%) of households engaged in farming after displacement. In fact, about two times more households were farmers after displacement with a percentage difference of 27% indicating that 27% more households were farmers after displacement as compared to before displacement. This striking change necessitated the need for further enquiries. Therefore, this section is specifically meant to investigate what determines agricultural diversification among the IDPs surveyed.

Table 5.8: Determinants of Agricultural Diversification

Variable	Odds ratio	Z-statistic	p-value
Age	1.3248	2.47	0.014
Gender	0.5765	-1.73	0.083
marital status	1.3829	0.8	0.422
family size	0.9945	-0.16	0.874
Religion	4.404	3.18	0.001
Education	1.0661	1.25	0.211
Duration of stay	1.1666	1.37	0.172
adequate land	1.1581	0.3	0.768
Farmhire	1.0084	0.03	0.975
Economic activity before displacement	0.7113	-2.66	0.008
Thresholds			
cut 1	-0.7716		
cut 2	3.0956		
cut 3	6.7231		

To find the determinants of agricultural diversification, the data gathered is ordinal in that the number of agricultural activities undertaken by households determined how diversified each household was. Agricultural activities in this study were grouped into three categories, that is, food crop cultivation, cash crop cultivation and livestock production. In this instance, households

engaging in all three were considered highly diversified horizontally in their agricultural activities. With such data, an ordered choice model is most useful. Table 5.8 shows the findings of the study on the determinants of agricultural livelihood diversification.

The estimated ordered logit model shows that all variables employed are jointly statistically significant as determinants of the degree of agricultural diversification because the LR chi-square statistic is 36.86, with a p-value of 0.0001. Table 5.8 shows that four variables are significant as determinants of agricultural diversification. Three of the four variables are statistically significant at 5% (age, religion and major economic activity before displacement), while one is marginally so at 10% (gender of household head).

In Table 5.8, it is shown that households with old aged heads are 1.325 times more likely to be diversified agriculturally than those headed by young adults. This seems valid since in rural Zimbabwe most elderly-headed households usually engage in the production of many crops though it may be on a small scale. Such activities include intercropping maize and beans, among others. This enhances the food security of the family and elderly household heads may be aware of such issues from indigenous knowledge.

Religion as a determinant of diversification also plays a significant role. The findings indicate that being a religious household head increases the probability that the household engages in more than one agricultural activity, odds ratio being 4.404 with p-value being 0.001. Religion, as a social capital variable, enhances information sharing. Thus, Christianity being the main religion practised by many Zimbabweans, IDPs in Arda Transau included where it was found that 90% of them are Christians, helps to communicate information about livelihoods. Also, when people gather for religious purposes, it is perhaps natural that they may engage in discussions about livelihoods and agricultural practices, especially during the agricultural season. This will help disseminate information on drought mitigatory measures such as agricultural diversification.

The major economic activity done by a household before and after displacement was recorded nominally and these activities include employment (coded 1), petty trading (coded as 2), farming (coded as 3), asset disposal (coded as 4) and other activities being coded as 5, this variable, thus, was regarded in this study as a nominal variable. The findings indicate that engaging in any other

activity as a means of survival means that a household is 0.7113 times less likely to engage in agricultural diversification and the variable was found to be significant at 5%, ($p = 0.008$).

At the 10% level of significance, gender was found to be a statistically significant variable in determining whether a household is agriculturally diversified or not. Females were 0.5765 times less likely to engage in diversified agricultural activities than males (Table 5.8). Since diversifying agricultural activities when one is still new in the area is more experimental than experience-led, these findings are congruent with the assertion that women are more risk-averse than man (Borghans, *et al.*, 2009; Nelson 2012).

To assess the assertion that women are less likely to diversify than males and whether determinants of such activities differ according to gender, the study modelled diversification models for males and females separately. From Table 5.9, one can note that two variables per group are significant determinants of diversification. However, the determinants differ between male- and female-headed households, thus supporting the assertion that the gender of the household head determines the level of diversification.

Table 5.9: Determinants of agricultural diversification by Gender

Variable	Odds ratio	
	Female	Male
Age	1.1559	1.3826**
Marital status	1.8916	2.0809
Family size	0.8574***	1.0167
Religion	6.9006	3.6138**
Education	0.9869	1.1095
Duration of stay	1.5303**	0.9465
Adequate land	0.5693	1.1686
Farm hire	0.6448	1.1954
Economic activity before	0.9967	0.8231
Thresholds		
Cut 1	-0.6259	0.4474
Cut 2	4.001	3.86
Cut 3	7.2011	7.7098

* Means significant at 1%, ** significant at 5% and *** significant at 10% level.

While older males are 1.3826 times significantly likely to engage in diversified farming, older females are 1.1559 times insignificantly likely to be diversified farmers. While diversification is likely to reduce the risk of food insecurity, female-headed households may be afraid that if they engage in unfamiliar activities they lose out in the process. Thus, female-headed households can conclusively be considered to be highly risk-averse than male-headed ones in this study just like Borghan *et al.* (2009) and Nelson (2012) highlighted.

Also, males are 3.6138 times more likely to engage in diversified farming with their choice being influenced significantly by religion $p < 0.05$. Unlike for male-headed households, this variable is insignificant for female-headed ones, although the odds are almost double those for male IDP households. These results most likely imply that male household heads use religion as social capital from which they gather information on better ways to diversify to mitigate food insecurity. Female-headed households who were displaced earlier were found to be 1.53 times more likely to engage in diversified agriculture than their counterparts who had recently been displaced. Thus, this result seems to be again in line with the assertion that most women are risk-averse (Borghana *et al.*, 2009; Nelson, 2012), they do not just venture into activities without prior knowledge of its pros and cons. Those IDPs displaced earlier are likely to possess superior information as far as agricultural needs of the soil and farming activities suitable in the area, are concerned; hence supporting findings by Bozzoli, Bruck and Muhumuzah (2011) and Barbelet (2017) that duration of stay in the post-displacement area plays a positive role in the determination of the choice of economic activities.

Unlike the duration of staying in Arda Transau, family size is less likely to influence female-headed households to diversify. Thus, large female-headed families are 0.8574 times less likely to diversify than smaller ones $p < 0.1$. In as much as diversification may reduce risk, larger female-headed households tend to venture mostly into familiar territories such as just planting one crop like maize. Summary statistics revealed that for any household whose membership exceeds eight, the number of agricultural activities undertaken is likely to be one. This confirms the argument that large family sizes are less likely to be diversified than small ones, as reported in Table 5.9.

5.5 Discussion

On the major economic activity front, farming was found to be the most practised livelihood activity by IDPs in Arda Transau. This finding conforms to the norm that most Zimbabweans are subsistence farmers. Thus, having been practising farming before displacement, the IDPs continued to do so after displacement. However, given that land has been lost, this loss affected IDPs' activities in as far as farming is concerned. Therefore, IDPs could not, as much, rely on farming as they could have done had they a larger land portion.

Furthermore, the findings show that married IDPs in Arda Transau are more likely to depend on petty-trading other than farming compared to non-married IDPs. One possible reason is that IDPs have been relying on this activity prior-to displacement (Nyawo *et al.*, 2012). A possible reason for married IDPs to depend on petty-trading more than the currently non-married group may be that the couples will help each other to scavenge for items to sell. For instance, if a family is to engage in the firewood selling business, the husband may help by offering labour to cut the wood, draught power to carry the wood and even do the selling. However, if it is a non-married household head, it may be difficult to do this at a scale compared to that of two adult members. Also, if the household head is a woman, the probability of engaging in petty-trading increases as compared to being a farmer. Possibly, this is so because petty-trading may be considered a feminine activity compared to farming. Some men may feel their masculinity has been compromised by engaging in petty-trading, for instance, selling firewood. They would, therefore, spend most of their time in farming than selling small items.

The activity that was done by a household before displacement increases the probability that the household will engage in it after displacement relative to being a farmer. Thus, IDPs in Arda Transau are more likely to engage in what they did before displacement than just being farmers. One possible reason is the fear of the unknown, thus one would want to play only in familiar territories, familiarity being determined by experience. Venturing into new territories may be dangerous especially in an area like Arda Transau where IDPs are left on their own without support from Government, NGOs and even the companies that displaced them. The avoidance of new economic activities by displacees is a sign of risk-aversion (Scudder, 1985). The results of

the study then corroborate the findings that families are engaged in petty-trading since they have been in it before displacement (Nyawo *et al.*, 2012), a finding similar to that by Amisi (2006) who indicated that displacees usually engage in what they did before displacement. The fact that families mostly engaged in what they are experienced at may be an indicator that the settlement is still in the transition phase as proposed by Scudder (1985). Before displacement, some families were into sugar-cane and vegetables selling businesses and also handicrafts for sale. Mostly these petty-trading activities, in Zimbabwe, are associated with women, hence the finding that women are more likely to be in petty-trading than men.

Women IDPs in Arda Transau were also found to be less likely to choose employment as a major livelihood activity than farming. This may be derived from the cultural norm that the man must be found to fend for the family by finding a job while the woman is mostly supposed to receive. However, this tendency is on the decrease. For Arda Transau residents it may also emanate from the fact that most IDPs are of the apostolic sect whose doctrine still upholds that men must be the only ones who may work, with women mostly engaging in fruit vending. This, therefore, explains why petty-trading may sprout in such an area though being less than what it was in Chiadzwa. On another note, women may be mostly influenced by the general tendency of general unemployment in the country such that they will be less motivated to rely on employment especially those whose husbands lost jobs from the mining companies.

The findings also indicate that religion increases the probability of one engaging in diversified agriculture (Table 5.9). Thus, being a religious male-headed household implies that the household would engage in diversified agricultural activities. Since most of the IDPs are Christians, it means that social capital is gained through Christian gatherings and used to the benefit of the households. Thus, as households gather for religious purposes, they also engage in discussions on how to improve their livelihoods leading to use of diversified agriculture.

Another important finding is that family size reduces the probability that a household engages in diversified agriculture. This finding implies that large households are more concerned with food crop cultivation alone, especially the female-headed ones, possibly because women are more risk-averse than men. This result may be considered to be proper given too limited space

available to the IDPs. However, it would have helped them by engaging in say both small livestock production and food crop production since animal manure will be used thereby lessening the burden for households' demand for inorganic manure. Also, female-headed households were found to be more likely to practice diversified agriculture after a long time in Arda Transau than men (Table 5.9). Thus, women are likely to take a long time before engaging in more activities than just food crop production. What women IDPs may not understand are the likely benefits derived from the concurrent production of food crops and livestock.

Three main conclusions from this study can, therefore, be spelt out. The first one is that the choice of economic activities among IDPs is determined by experience acquired before displacement. Thus, those households who were, say, into petty-trading are more likely to engage in petty-trading as an economic activity even after displacement, while those who have experience in agriculture are likely to do likewise.

The second conclusion is that males' and females' choices of whether to engage in diversified agricultural activities are determined by different factors, with males' choices being determined by age and social capital while females' choices depend on family size and duration of stay. Therefore, male-headed households with older and religious heads are likely to engage in diversified agricultural activities than their counterparts who may be young and non-religious.

Thirdly, male-headed and female-headed IDP households employ different livelihood strategies after displacement. While male-headed households rely more on agriculture, female-headed ones rely more on petty-trading as an economic activity after displacement. Thus, the gender of the household head is a significant determinant of the choice of economic activity.

The results showing that most households are not diversified are perhaps congruent with the argument by Dzanku and Sarpong (2011) who indicated that risk-averse rural households may not diversify agriculturally especially if their food security is threatened. As found in Chapter Four of the thesis, households are food insecure hence in line with Dzanku and Sarpong (2011), the IDPs may not diversify because it may exacerbate their food insecurity. Furthermore, poorer households were argued to be less likely to diversify especially into cash crop because they

cannot afford to ensure food security through food purchases. The thesis supports that argument since it established that IDP households in Arda Transau were poor since they earned way less than US\$100 per month and that these households were not diversified agriculturally thereby leading to the conclusion that poor households are usually not diversified agriculturally. That cash crop production is rare among displacees was also found by Bruck (2004) and Rahim, Jaimovich and Ylonen (2013).

5.6 Conclusion

The findings from the study on economic activities among IDPs have been reported in this Chapter. These findings show that more than half (53%) of all IDP households use farming as the main livelihood activity followed by petty trading which was practised by 19% of IDPs. Economic activity before displacement was found to be the most dominant determinant of choice of economic activity after displacement implying that IDPs depended strongly on their experience. It was also found that 56% of IDPs engaged in only one agricultural activity, therefore, were not diversified. Again, agricultural diversification was mostly determined by age and economic activity that the households did before displacement. Chapter Six which comes next presents the findings on SWL.

CHAPTER SIX: QUANTIFICATION AND DETERMINANTS OF SATISFACTION WITH LIFE AMONG IDPs

6.1 Introduction

In Chapter Four, the thesis presented the findings on the economic consequences of mining-induced displacement. Furthermore, Chapter Five presented the determinants of economic activities after displacement. All this having been presented and now known, the thesis turns to the possible effects of mining-induced displacement on SWL among the IDPs in Arda Transau. Thus, this chapter presents results on the determinants of SWL after displacement. It has been shown in the literature that displacement is a stressful life-changing event, therefore, there is a likelihood of SWL to change after displacement. Pareto optimality would also predict that mining will affect IDPs' utility so that others will be better off. Thus, the Government cannot improve the nation's welfare through exports of minerals without affecting IDPs' lives.

As a roadmap, the chapter starts with the summary statistics in Section 6.2. Following summary statistics, presentation of results on the determinants of SWL among IDPs is done in Section 6.3. After the results are presented, they are discussed in Section 6.4. In Section 6.5, a chapter conclusion is made.

6.2 Summary Statistics

Out of the 274 households issued with questionnaires and therefore interviewed, 260 questionnaires were usable giving a response rate of 95%. Out of these households, a larger proportion (63%) was made up of male-headed households. Many (66%) of the female-headed households were satisfied with pre-displacement life as compared to male-headed households (63%) although on the whole most (64%) households were satisfied with pre-displacement life compared to post-displacement current life (45.4% of households).

The findings of the thesis are presented in tabular form and are presented starting with life satisfaction quantification, by various categories such as gender, followed by life satisfaction modelling. The discussion of results on SWL is also done here.

6.2.1 Life satisfaction Quantified

Under the specified methodology, life satisfaction was quantified and the results obtained are reported in Tables 6.1 to 6.9. The mean response for each period was calculated and reported accordingly as in Table 6.1. Interpretation of Table 6.1 is based on comparing the mean value with the maximum of the ordered temporal satisfaction with life scale. For instance, with a mean of 4.5269, this figure is almost 65% of 7. Connecting Tables 6.1 and 6.2, one would find that 4.23% of respondents were neither satisfied nor dissatisfied (Table 6.2), implying that almost 32% of the population were dissatisfied.

In Table 6.1 it is shown that generally, life satisfaction before displacement was slightly above average with a mean of 4.53, which is usually the case that people are satisfied with their lives. Currently, the IDPs were found to be slightly less satisfied because their life satisfaction score was 3.73 which is slightly less than the average life satisfaction of 4 and translates to a 53% level. However, the future seems bright for the IDPs who reported that their life satisfaction is likely to go back to its pre-displacement level of 4.53 and marginally surpass it since it will be 4.54.

Table 6.1: Aggregated Ordered Life Satisfaction

Ordered Life satisfaction	Mean	Standard Deviation	Minimum	Maximum	Response value	Interpretation
Pre-displacement period	4.5269	1.9380	1	7	Slightly satisfied	65% satisfied. (32% not satisfied).
Current period	3.7269	2.1557	1	7	Neutral or average	53% not satisfied with life. (45% satisfied with life).
Future period	4.5385	1.8481	1	7	Slightly satisfied	65% satisfied. (34% not satisfied).

NB: Results in parentheses refer to sample proportions as can be deduced from Table 6.2.

To get a glimpse of the various satisfaction levels, Table 6.2 reports disaggregated life satisfaction statistics that were obtained from the survey. Table 6.2 shows that generally, the IDPs were satisfied with their past life given that most of them, 64% (166 respondents), reported being satisfied with their past life while less than half, 118 (45%) were satisfied with their current life. Current life was reported as not so good for the IDPs may be because of unmet promises they were given by the companies responsible for the IDPs' resettlement. The future, however, was viewed as bright for these IDPs with the hope that their grievances will be resolved hence they will be satisfied with their life. Therefore, a large number, 154 (59%) reported that they will be satisfied with their future life. This, proportion however, is less than that of the previous area life satisfaction level. That these people expect to be happy in future corroborates the statement by van Tiburg and Igou (2019, p. 543) when they stated that "...people seem to hold the belief that they will become happier in the future ..." and that "[h]umans are skilled in anticipating the future and adjusting their behaviour accordingly" (van Tilburg and Igou, 2019, p.541).

Table 6.2: Disaggregated Ordered Life Satisfaction

Period	Life Satisfaction Score Frequency							Total
	ED	D	SD	N	SS	S	ES	
Pre-displacement	27 (10.38%)	32 (12.31%)	24 (9.23%)	11 (4.23%)	58 (22.31%)	76 (29.23%)	32 (12.31%)	260 (100%)
Current	52 (20%)	57 (21.92%)	29 (11.15%)	4 (1.54%)	33 (12.69%)	60 (23.08%)	25 (9.62%)	260 (100%)
Future	11 (4.23%)	44 (16.92%)	34 (13.08%)	17 (6.54%)	50 (19.23%)	67 (25.77%)	37 (14.23%)	260 (100%)

Key: ED= Extremely Dissatisfied, D = Dissatisfied, SD = Slightly Dissatisfied, N = Neutral

SS = Slightly Satisfied, S = Satisfied, ES = Extremely Satisfied

Very few respondents were neither satisfied nor dissatisfied with their lives. This category was represented by 11 (4.23%) in the pre-displacement period, 4 (1.54%) in the current period and 17 (6.54%) in the future.

The mean of the aggregated version of total life satisfaction is reported in Table 6.3. As already alluded to before, the previous area generally has a satisfaction score higher than the current but is slightly less than the future.

Table 6.3: Aggregated Mean Life Satisfaction

Period	Mean	Standard Deviation	Minimum	Maximum
Previous	22.3423	7.6981	7	35
Current	19.25	8.6526	5	35
Future	22.4269	7.2452	5	35

A possible reason for a higher satisfaction with life in the pre-displacement area may be attributed to the fact that life improved in Chiadzwa immediately before being displaced because of some brisk business from informal miners who operated in the area (Nyawo *et al.*, 2012). Currently, the IDPs may be viewing the past to be better than the current since most people believe the past is always better than the present, however, the IDPs were optimistic in that they view the future as likely to be slightly better than even the past. Therefore, they expected future satisfaction with life to be higher than both the previous and current levels.

The findings in Tables, 6.1 to 6.3 seem to corroborate the arguments posed by the stoicism theory of life satisfaction which indicates that despite unpleasant moments, life satisfaction remains relatively unchanged. Again, the set point theory might explain the reduction in SWL in the current period with the potential to return to its usual position since future SWL was found to be closer to pre-displacement period SWL. Thus, from these tables, one can note that life satisfaction level hovers around its pre-displacement level. However, these results also show that despite 48% of displacees reporting willingness to stay in Arda Transau as reported in Chapter

Four, only 45% of the respondents are satisfied with the current life meaning to say almost the same people who are willing to stay are the ones satisfied with life in Arda Transau. Another possible explanation for willingness to stay might be from the future life satisfaction where 59% reported expecting to be satisfied with life. Therefore, the residents may be willing to stay because they expect future life to be satisfying. This may also be associated positively with time to adapt to the environment (Temelova and Slezakova, 2014) implying that IDPs perceive that once they get more used to life in Arda Transau, all will get better. Another possible explanation might be the lack of resources. If households had the resources to migrate and start another life, they may also have been willing to migrate. Also, the willingness to stay may be coming from the cultural side. Mburugu (1994) noted that in Africa, a person's identity is tied to their culture. As a result, it may be possible that residents may not be willing to move to other areas possibly with a different culture since their current immediate neighbours share the same culture as themselves, of course not taking into account the possibility of the current host community culture being different.

6.2.2 Life Satisfaction by Gender

In a bid to find out whether life satisfaction differs according to gender Table 6.4 was used. The main reason for comparing across gender emanates from the claims that displacement mostly affects females compared to males hence female respondents' life satisfaction is likely to be affected more than that of males. Also, the literature suggests that most women are satisfied with their lives than males. Thus, this sub-section tries to figure out if gender plays a role in life satisfaction determination among IDPs in Arda Transau.

Table 6.4: Pre-displacement Life (Life in Chiadzwa)

Life satisfaction/Gender	Not Satisfied	Neither dissatisfied nor satisfied	Satisfied	Total	Percentage satisfied
Male	53	8	102	163	62.6%
Female	30	3	64	97	66%
Total	83	11	166	260	64%

Out of the 260 respondents, the majority, about 63% (163) were males while 37% (97) were females. A significant proportion (64%) of all interviewees reported being satisfied with their life in Chiadzwa while about 32% were not and 4% were neutral which means eleven respondents were neither satisfied nor dissatisfied with their life in Chiadzwa. From the 163 male IDPs, a relatively large proportion, 63% (102), was satisfied with their lives in Chiadzwa while 33% were not. Only five per cent of male respondents were neither satisfied nor dissatisfied with life in Chiadzwa. On the contrary, another significant proportion (66%) of female respondents reported being satisfied with their life in Chiadzwa while 31% were dissatisfied with it. A percentage difference of 3%, calculated as 66% subtract 63%, meaning that three per cent more female-headed households compared to male-headed ones were satisfied with life in Chiadzwa. This seems to confirm the assertion that generally, females are more satisfied with life than their male counterparts. All in all, more respondents were satisfied with their lives in Chiadzwa than those who were dissatisfied with it.

Details of the current status of life satisfaction are shown in Table 6.5 which shows that out of the 166 individuals who reported being satisfied with life in Chiadzwa, 118 also reported being satisfied with life in Arda Transau, while 55 more individuals reported being dissatisfied with their life in Arda Transau.

Table 6.5 Current Life

Life satisfaction/Gender	Dissatisfied	Neither dissatisfied nor satisfied	Satisfied	Total	Percentage satisfied
Male	81	2	80	163	49.1%
Female	57	2	38	97	39.2%
Total	138	4	118	260	45.4%

Therefore, the number of those who reported being satisfied with life decreased by about 29% because of displacement whilst those dissatisfied increased by 66%. To test if displacement and life satisfaction are associated, a chi-squared test was used. The chi-square test findings indicate

that life satisfaction fell significantly after displacement $\chi^2(2, N = 260) = 25.0671, p < 0.01$. Forty-nine per cent of male respondents reported being satisfied with life in Arda Transau while only 39% of female respondents reported so giving a percentage difference of 10%. Therefore, about 10% more male-headed households believe that they are satisfied with life in Arda Transau. This seems to confirm that females' life satisfaction is more affected by displacement than that for males since before displacement a larger proportion of females were satisfied with life than males. The explanation may be coming from the gendered effects of displacement. However, since the thesis failed to find the gendered economic consequences, this may be explained by non-economic consequences of displacement which may be gendered. Fifty per cent of the males reported being dissatisfied with life in Arda Transau while only one per cent of them were neither satisfied nor dissatisfied with life. On the women side, 59% reported being dissatisfied with their current life. This disparity may come from the fact that the male being is less psychologically affected by traumatic life events than the female one. For future life, Table 6.6 reports the results.

Table 6.6 Future Life

Life satisfaction/Gender	Not Satisfied	Neither dissatisfied nor satisfied	Satisfied	Total	Percentage satisfied
Male	49	11	103	163	63.2%
Female	40	6	51	97	52.6%
Total	89	17	154	260	59.2%

Both males and females are optimistic that they will be satisfied with their future life with 59% of respondents reporting that. For future life, males are, however, more optimistic and, therefore, a larger proportion (63%) of them reported likely satisfaction with future life unlike 53% of the females. Therefore, 10% more male household heads believe that they will be satisfied with life in the future compared to female household heads. Given the nature of the Zimbabwean society, women are meant to do some chores which in Arda Transau may be more demanding than in

Chiadzwa, like fetching water and firewood. Women, therefore, may have been very conservative when it comes to future life. This conservativeness may be coming from the fact that firewood business is likely to be more difficult since the firewood will be fetched in distant places hence making meeting life demands more difficulty in future.

6.2.3 Life satisfaction by Place of Residence

Another line of thought pursued is to disaggregate life satisfaction by current place of residence as shown in Tables 6.7 to 6.9. The purpose of this comparison was to figure out if the characteristics embedded in each area can determine life satisfaction.

Place of residence as a determinant of life satisfaction was compared across the areas making Arda Transau. The results reveal that the majority of IDPs were satisfied with life in Chiadzwa with 75%, 69% and 58% for Anjin, DMC and Jin An, respectively, reporting being satisfied with that life.

Table 6.7 Pre-displacement

Life Satisfaction/Residential Place	Dissatisfied	Neither Satisfied nor Dissatisfied	Satisfied	Total	Percentage satisfied
Anjin	30	3	101	134	75.4%
DMC	3	1	9	13	69.2%
Jin An	18	5	32	55	58.2%
Marange Resources	17	1	10	28	35.7%
Mbada	15	1	14	30	46.7%
Total	83	11	166	260	63.8%

Only the majority of those in Marange Resources and Mbada Diamonds were dissatisfied with life in Chiadzwa where 61% and 50% reported being dissatisfied, respectively. For Mbada, 50%

reported being dissatisfied while 47% reported being satisfied with their previous life and one per cent was neither satisfied nor dissatisfied. A larger proportion of displacees in Anjin area was satisfied with life in Chiadzwa than that of DMC, Jin An, Marange and Mbada Diamonds combined, where about 52% reported being satisfied with life in Chiadzwa as compared to 75% of those displaced by Anjin.

Currently, the minority (45%) are satisfied with life compared to those dissatisfied with it (53%) as revealed by Table 6.8. While on the whole, current life in Arda Transau was judged generally not to be satisfactory (45%), 40% of the areas comprising Arda Transau reported that life was currently satisfying. Contrary to what was reported in Table 6.7, Marange Resources and Mbada Diamonds residents viewed life in Arda Transau relatively satisfying.

Table 6.8 Current Life

Life Satisfaction/Residential Place	Dissatisfied	Neither Satisfied nor Dissatisfied	Satisfied	Total	Percentage satisfied
Anjin	75	3	56	134	41.8%
DMC	9	0	4	13	3.1%
Jin An	36	1	18	55	32.7%
Marange Resources	7	0	21	28	75%
Mbada	11	0	19	30	63%
Total	138	4	118	260	45.4%

Surprisingly, in terms of amenities, such as roads and reticulated water supply, these areas are the worst. One possible explanation for reporting satisfaction with life may be from comparing where they were located with the current location area characteristics. It might be possible that they were in a worse area than the current one. Another aspect generally shared by residents in

Arda Transau is a better climatic condition in the area compared to Chiadzwa. The two, combined or individually, may be the possible reasons for these life satisfaction scores reported by Mbada and Marange Resources residents.

Future life seems to be similar to the current one for Anjin residents where 57% expected to be satisfied with life in the future compared to 56% in the current period (Table 6.9). For DMC residents, 62% expect to be satisfied with their future life, which is a reduction from 69% in the past and current life satisfaction.

Table 6.9 Future Life

Life Satisfaction/Residential Place	Dissatisfied	Neither Satisfied nor Dissatisfied	Satisfied	Total	Percentage satisfied
Anjin	48	9	77	134	57.5%
DMC	4	1	8	13	61.5%
Jin An	28	4	23	55	41.8%
Marange Resources	5	0	23	28	82.1%
Mbada	4	3	23	30	76.7%
Total	89	17	154	260	59.2%

A major expected increase in life satisfaction was reported by residents of Marange Resources, where 82% expect life to be satisfactory compared to 36% and 75% in past and current period, respectively. This is followed by life satisfaction among Mbada Diamond residents where 77% expect life satisfaction to increase compared to 63% and 47% in the present and past life satisfaction, respectively. Therefore, the majority of Marange Resources and Mbada Diamonds residents are optimistic about the future life.

In a bid to determine whether satisfaction with life differs across locations, a chi-squared test of independence was used. The findings indicate significant differences in SWL among locations during the three phases used in the analysis $p < 0.05$. Therefore, significant differences existed across locations both before and after displacement. These differences may be attributed to differences in amenities in the areas especially after displacement, with areas such as Anjin having reticulated water supplies while DMC have solar-powered houses. These external environment characteristics may differentially affect SWL among the residents as espoused by the bottom-up approach which postulates that the external environment is very important in explaining SWL.

6.3 Modelling Life Satisfaction

The thesis followed a general to the specific approach of model selection in each period studied. Following the ordered logit approach, all variables were included in the model to find significant determinants of life satisfaction among the internal displacees in Arda Transau. However, since the current study did not establish some variables such as educational attainment before and after displacement, past life satisfaction determinants modelling was left out. The findings from the general to the specific model selection approach indicated that some variables were not significant in determining life satisfaction for a particular period. Significant variables were then included as the only determinants in the model for life satisfaction for that particular period.

Brant test results for parallel lines also indicate that variables used met the parallel lines approach. The violation of parallel lines assumptions in ordered logit models may alter conclusions made from findings however, with minimal practical implications. In support of results being altered by violating parallel lines, Azen and Walker (2011) indicate that violation of this proportional odds assumption results in nonsensical results.

Threshold parameters or cut-points are interpreted in this study using the Daykin and Moffat (2002) approach. This approach uses the middle estimated thresholds in the interpretation of thresholds. In this study, multicollinearity test was carried out using the correlation matrix. The correlation matrix revealed that there is no problem of multicollinearity since no correlation coefficient exceeded the 0.8 benchmarks.

From the general model, the most controversial determinant of satisfaction with life, income (absolute or relative), was found insignificant in this study. A possible explanation is that there is not much variation in income in the area as also reported in Chapter Four of the study. This result implies that income does not buy happiness hence materialism does not in itself determine how satisfied one is with their life in Arda Transau. Apart from absolute income, relative income was also not significant. The results from the two-income variables indicate that being rich and being richer than others does not increase one's life satisfaction among IDPs in Arda Transau. Contrary to the argument that being richer than others increases life satisfaction, Proto and Rustichini (2015) argue that the rich may have higher aspirations, hence failure to achieve them reduces life satisfaction.

The findings also indicate that gender is insignificant in determining life satisfaction even though 49% of males versus 39% of females reported being satisfied with current life-giving a percentage difference of 10%. Thus, contrary to the consensus that women are generally more satisfied with life than men (Amit, 2009; Ng, Tey & Asadulla, 2017), there was no statistically significant difference in life satisfaction among male and female-headed households meaning that men and women were equally satisfied with life in Arda Transau. These results are not that unique in that Fugl-Meyer, Melin and Fugl-Meyer (2002) and Ngoo, Tey and Tan (2014) also found that gender is an insignificant determinant of satisfaction with life. It seems plausible that these results are correct because males and females were equally affected by displacement since their source of livelihood was the same in Chiadzwa.

Another key and somewhat surprising finding from the general model was that employment status was insignificant, thus the employed are not happier than the unemployed. It is surprising because many of these IDPs lost their employment after being displaced yet employment became an insignificant variable in the model. One possible explanation may come from the works of Frey and Stutzer (2002) who indicated that the employed may not be happier than the unemployed because of the additional burden imposed on the employed to cater for the unemployed. The employed may be forced to go an extra mile by contributing towards sustaining the unemployed relative(s). Also, the fact that Zimbabwe has a high general unemployment rate means that even if one is unemployed, their satisfaction with life may not be

reduced because there is solace in numbers. The sub-sections that follow present models of life satisfaction in the current and future periods, in that order.

6.3.1 Satisfaction with Current Life

Again a whole model made up of all variables was run and only those reported in Table 6.10 were significant in explaining current life satisfaction at 5% and 10%. For the sake of brevity, these significant variables were run in a sub-model and the results are presented in Table 6.10.

Multicollinearity test among the chosen explanatory variables was done using the correlation matrix. Results reveal that there is no severe multicollinearity since all correlation coefficients were less than 0.8, with the largest being among the two citizenship activities variables which was found to be 0.6738. Also, the model was found to be statistically significant $\chi^2(6) = 89.13, p < 0.01$.

In Table 6.10, household size was found to be positively and significantly related to current life satisfaction, ($\beta = 0.0799$) $p < 0.05$ with an odds ratio of 1.08. Thus, being in a large household seems to increase the probability that someone will report being satisfied with life, meaning that larger families are about 1.1 times more likely to be satisfied with their life than smaller families. The positive coefficient perhaps implies that an increase in household size decreases the probability of one being in the lowest life satisfaction category (extremely dissatisfied), but increases the probability of one being in the highest satisfaction with life category (Extremely satisfied). The findings appear to contradict the argument that larger households tend to be less satisfied with their lives as compared to smaller ones (Mafini; 2017). However, the findings appear to agree with the familism theory where, as family size increases, members cooperate for the good of the whole family and hence life satisfaction increases. Also, as Jaunky, Jeeto and Rampersad (2019) claimed, larger households may be happier than small ones because the degree of selfishness may be lower.

Table 6.10 Current Life Satisfaction

Variable	Coefficient	z-statistic	p-value
Household size	0.0799	2.42	0.016
Citizenship activities 2 (Talked to the local authority or government official about a problem)	0.2325	0.69	0.490
Citizenship activities 1 (joined with other community members to solve a problem)	-0.6460	-1.99	0.047
Area satisfaction	1.239	8.38	0.00
Number of Groups one belongs to	0.2769	1.56	0.119
Cognitive social capital	-0.3073	-1.91	0.056
Thresholds		Value	
Cut 1		0.1414	
Cut 2		1.4536	
Cut 3		2.0461	
Cut 4		2.1294	
Cut 5		2.8196	
Cut 6		4.6032	

LR $\chi^2(6) = 89.13$, Prob $\chi^2 = p < 0.01$, Pseudo $R^2 = 0.0958$, Log-likelihood = -420.5810

Household size was also found to be positively related to satisfaction with life possibly because the more people in a household the cheaper will likely be the labour for that household. In Arda Transau, displacees have to ferry firewood to Odzi for sale and this needs labour. Thus, possibly

a larger family will likely be getting more, in absolute terms, from the sale of firewood than a smaller one. In line with the familism ideology, where the combined needs of the family outweigh individual needs, these larger families may end up being happier as a whole than smaller ones. Also, some male household-heads perhaps feel satisfied with life just because they have many wives translating to many household members since having many wives resembles the power of the household head.

In the social capital front, joining with other community members to solve a common problem (community participation or civic engagement) was found to significantly reduce life satisfaction, ($\beta = -0.6460, p < 0.05$) with an odds ratio of 0.5241. Therefore, the frequency of one joining with community members to discuss and solve community problems increases the probability of someone falling in the lowest life satisfaction category but reduces that someone's probability of being extremely satisfied with life in Arda Transau. This is possibly so because these displacees sometimes may not agree on an issue and some may feel they are 'more equal than others', hence being part of a group to discuss a common problem may reduce life satisfaction instead of improving it. Also some areas, within Arda Transau, have their unique problems hence coming to common grounds across areas may be difficult. For instance, some areas like Mbada Diamonds and DMC rely on borehole water while others such as Anjin have piped water that is paid for. As reported in Table 6.8, the differences in satisfaction with life after displacement across residential areas may also be a source of disagreement. Therefore, failure to reach consensus on these issues may lead to disgruntlement with group meetings. Additionally, Coleman (1988) noted that certain norms may be a constraint in their own right. He argues that certain norms may direct energy in a direction possibly not favourable to others. This may explain the reason why community participation attained an unexpected sign.

Also, fear of the unknown may lead to lower life satisfaction with regards to associating with others to talk about problems in the area. Some individuals may have a feeling that by airing their views in public meetings, they expose themselves to victimisation by colleagues in the area. It is also possible that rifts that existed before displacement may still exist so that association with each other still cannot be possible. In the same vein, cognitive social capital was also found to insignificantly affect life satisfaction among Arda Transau displacees which is in line with

findings by Takahashi *et al.* (2011). The findings on cognitive social capital may be an explanation of the sign on civic engagement. Literature suggests that trust must be built before civic engagements can be used as a good social capital element (Cherti, 2008). Causation between trust and civic engagement remains not clear. The question that remains unresolved is does civic engagement lead to trust or vice versa? If trust leads to civic engagement, then that trust and other components of cognitive social capital were found insignificant, maybe the possible reason why the civic engagement was also found insignificant as a determinant of satisfaction with life.

Being currently satisfied with the area significantly increases the probability of one being satisfied with their current life ($\beta = 1.239$ 1.239, $p < 0.001$) with an odds ratio of 3.4521. Thus, those who are satisfied with the area are 3.4521 times more likely to be currently satisfied with their life than their counterparts who feel not satisfied with the area. In this regard, this explains why about 48% of the residents indicated being willing to stay in Arda Transau even if they were given an option (Chapter Four). This may be explained by the presence of amenities in the area, such as roads which are better than those which existed in Chiadzwa. Additionally, the area is closer to Mutare town than Chiadzwa. Being closer to better facilities such as provincial hospitals has an effect on life satisfaction especially knowing well that one day one may need the facilities. Also being closer to sources of water and the clinic may enhance SWL.

It seems, however, surprising that despite being over-crowded, the area remains satisfactory to the IDPs. This implies that the effect of overcrowdedness is outweighed by other benefits such as fertile soils and some social amenities within the area. The finding that being satisfied with neighbourhood characteristics increases life satisfaction is not unique in that Fernandez-Portero, Alarcon and Padura (2017) also found so. However, security of tenure is equally important in Arda Transau. Upon further probing, it was revealed that the IDPs complain about ownership of houses in which they live. If they could be given ownership by having title deeds, this will likely improve the life satisfaction of the displaced individuals. Along this line of thought, Huang, Du and Yu (2015), Sunmola, Alarape and Olusegun (2016) and Charles, Wu and Wu (2019) found that homeownership increases SWL.

The threshold parameters reflect that the questions relating to current satisfaction with life were well understood by the respondents and that they were keen to express their opinions (Daykin & Moffat; 2002). This is reflected in the fact that the middle threshold parameters are bunched together that is 2.0461 and 2.1294 for cut-points 3 and 4 respectively.

The Brant test for parallel regression assumption, Table 6.11, shows that the parallel regression assumption is upheld [$\chi^2(30) = 37.25$, $p = 0.170$], in the row labelled ‘All’ (Williams, 2019). This implies that the Ologit model applied was suitable without any problems. The Brant test results are presented in Table 6.11. A closer look at the Brant test results shows that citizenship activities 2, talking to a public official, is significant at 5% level, meaning that the variable fails to meet the parallel lines assumptions but this is overridden by the decision relating to the overall chi-squared value.

Table 6.11 Brant Test for Parallel lines

Statistic/Variable	Chi ²	p>Chi ²	Df
All	37.25	0.17	30
Household size	8.23	0.144	5
Groups	3.19	0.671	5
Citizenship activities 1	1.28	0.937	5
Citizenship activities 2	11.62	0.04	5
Cognitive social capital	0.94	0.967	5
Area satisfaction	4.95	0.422	5

The study proceeded to run a non-proportional odds model using gologit2 and findings indicated that the variable (citizenship activities 2) remained insignificant for all categories except one, the extremely satisfied category; hence no results for this are reported here. These findings from gologit2 confirmed that this variable surely does not obey the requirements of the proportional

odds model because the coefficients were not the same across different levels of life satisfaction (Williams, 2006). However, this could not invalidate results from the overall decision based on an overall chi-squared test (Williams, 2006).

After modelling current life satisfaction, the study proceeded to study the determinants of future life satisfaction. Current and future life satisfaction may be determined by different variables, hence the need to consider future life satisfaction on its own. The findings are reported in Table 6.12 and their interpretations follow.

6.3.2 Satisfaction with Future Life

Using general to specific modelling, six variables were found to significantly determine future satisfaction with life among internal displacees. However, the specific model found out that only four of them could significantly determine life satisfaction. When these variables are combined, they were found to significantly determine future life satisfaction [$\chi^2(6) = 85.74, p < 0.01$]. These two statistics, the chi-squared value and p-value, imply that the model specified has a strong overall significance and therefore includes the possible variables that determine future life satisfaction among the displacees.

As reported in Table 6.12, structural social capital as a whole failed to significantly determine future life satisfaction but two of its components do. Support from individuals was found to positively and significantly increase the probability that someone will be satisfied with life in the future ($\beta = 0.6178, p < 0.01$) with an odds ratio of 1.8548. The odds ratio implies that a displacee who gets support from other individuals is 1.8548 times more likely to be satisfied with their future life. This finding supports those by Dhurup and Surujlal (2009) in South Africa. Barbelet (2017) also established that support, for most migrants, comes from individuals, not institutions. This may, therefore, explain why support from individuals was found to be a statistically significant variable.

Table 6.12 Satisfaction with Future Life

Variable	Coefficient	z-statistic	p-value
Group membership	0.0808	0.36	0.721
Support from groups	-1.1061	-4.23	0.00
Support from individuals	0.6178	4.04	0.00
Perceived health	-0.3736	-2.73	0.006
Area satisfaction	0.9438	6.61	0.00
Cognitive social capital	0.06447	0.40	0.686
Thresholds	Value		
Cut 1	-2.548		
Cut 2	-0.487		
Cut 3	0.3174		
Cut 4	0.6547		
Cut 5	1.6253		
Cut 6	3.3056		

LR chi2 (6) =85.74, Prob chi2 = p <0.01, Log-likelihood = -431.0479

Support from groups to which the displacee belongs was found to reduce the life satisfaction of the displacee ($\beta = -1.1061, p < 0.01$). Those displacees with support from many groups (two or more) are less likely to be satisfied with their future life as compared to those who did not get any (odds ratio = 0.3309). It seems that support from groups is likely to reduce future life satisfaction because people will lose their self-esteem by getting too much support from various

groups. It is also possible that these displacees consider support as in material things and, hence felt that by getting that support they lose their self-independence.

The findings seem to indicate that displacees who are already satisfied with the area are more likely to be satisfied with their future life as compared to those who are already not satisfied, odds ratio being 2.57 meaning those IDPs who reported being satisfied with neighbourhood characteristics were 2.57 times more likely to be satisfied with life than those who reported not being satisfied with neighbourhood characteristics. On the contrary, cognitive social capital failed to determine satisfaction with future life significantly.

In Table 6.12, those displacees who perceive their health to be good feel that they will have reduced satisfaction with their future life. Perceived health decreases the probability that someone will be satisfied with future life ($\beta = -0.3736, p < 0.01$) and the odds ratio is 0.6882. Thus, those respondents who perceive themselves to be healthy are 0.6882 times less likely to be satisfied with their future life compared to those who perceive themselves as generally not healthy. This may imply that those who are healthy feel that they will be underutilised in the area since the majority of displacees are unemployed. Again, in the near future remaining unemployed means that as the IDPs grow older they will end up being unemployable hence the productive age will have been lost, thus, reducing satisfaction with future life. However, the findings are contrary to those found by Ng, Tey and Asadullah (2017) who found a positive relationship between life satisfaction and all health-related variables. In this regard, possibly, their findings differed from the ones in this study because in their study they were concentrating on current life alone.

Area satisfaction significantly increases the probability of being satisfied with future life ($\beta = 0.9438, p < 0.01$) with an odds ratio of 2.5699. Therefore, those who are currently satisfied with the area are 2.57 times more likely to be satisfied with their future lives than those who are not currently satisfied with Arda Transau. These results further support those of Hsu, Chang and Yip (2007) and Fernandez-Portero, Alarcon and Padura (2017) who found that neighbourhood characteristics have a positive impact on life satisfaction. This result is also in line with the impact of livability on SWL as propounded by Veenhoven (1995). This study's findings show that IDPs in Arda Transau are optimistic that this area is good and will remain so, hence will

increase their life satisfaction with time. It also explains why about 48% of these residents reported being willing to stay in Arda Transau even if they were to be given an option to move.

The cut-points reflect that considering questions relating to future life satisfaction, displaces understood these questions well since the middle cut-points are still bunched together that is, 0.3174 and 0.6547 for the third and fourth thresholds, respectively. Thus, there were no problems in understanding future life satisfaction questions by the respondents.

To again validate findings, the proportional odds model assumption was tested using the Brant test and findings in Table 6.13 indicate that all variables combined do not violate the parallel lines assumptions [$\chi^2(30) = 35.05, p = 0.241$], from the row labelled 'All'. Also individually, the variables do not violate the parallel lines assumption since all coefficients are also individually statistically insignificant at 5%. Thus, the Ologit model was appropriately applied in this study.

Table 6.13 Brant Test for Proportional Odds Assumption

Variable	Chi-square	P chi-square	Df
All variables	35.05	0.241	30
Group membership	2.43	0.786	5
Support from groups	5.04	0.411	5
Support from individuals	9.46	0.092	5
Perceived health	5.07	0.407	5
Area satisfaction	10.0	0.075	5
Cognitive social capital	1.48	0.916	5

6.4 Discussion

One of the main conclusions derived from this chapter is that most IDPs are slightly satisfied with life in Arda Transau. This justifies the reason why about 48% of the IDPs were willing to stay in the area, as found in Chapter Four of the thesis since area satisfaction was the most significant determinant of satisfaction with life, ($p < 0.01$). There is also a consensus among researchers that neighbourhood characteristics determine life satisfaction (Hsu, Chang & Yip, 2007; Sunmola, Alarape & Olusegun, 2016; Fernandez-Portero, Alarcon & Padura, 2017; Charles, Wu & Wu, 2019) in that being satisfied with neighbourhood characteristics increase life satisfaction. Therefore, the area seems a good place to reside in as viewed by IDPs. Such characteristics that make the area so attractive may be a good road network and proximity to town and clinic.

Another key result is that some structural social capital components play an important role in life satisfaction among IDPs. Thus, those IDPs with strong social ties have a higher probability of being satisfied with life than those with few ties, a result also consistent with previous findings by Takahashi *et al.* (2011). Therefore, support from groups and community participation were both found to significantly determine satisfaction with life. It, therefore, could validate the claim that social capital is a significant determinant of SWL.

Community participation construct of social capital was found to be a statistically significant negative determinant of SWL. The results seem valid from a group dynamics perspective. In the words of Johnson and Johnson (2014, p.7) “[a] group may be defined as a collection of individuals who are trying to satisfy some personal need through their joint association”. In this line of thought, each member expects to get mutual benefits from the group (possibly because they may have failed to do it as an individual) and in the process live a happy life. Failure to mutually benefit from the group is likely to reduce one’s life satisfaction as influenced by group interactions. The possible reason for one to consider themselves as having failed to benefit individually from the group might be because individuals’ objectives may differ from group objectives. With that in mind, it is plausible to argue that IDPs may have conflicting objectives, possibly among the areas. Such conflicts may emanate from certain unique area differences

which make consensus difficult. Therefore, SWL will reduce with group membership, when a group, in this case, refers to Arda Transau as a whole.

IDPs who perceive themselves to be healthy reported low future satisfaction with life. Since the majority of IDPs are unemployed, they possibly feel their potential will not be attained in future, hence perceived health attained a negative sign in this study. With age being associated with many illnesses, as explained by ageism, the IDPs probably reported lower SWL because of unutilised active years since they are unemployed. In this regard, since the majority, about 52%, of respondents fall within the 19 to 41 years, this is critical because their working-age during the mostly healthy period is being lost because of displacement. To corroborate this group are those who are within 42 to 65 years age group who comprise 38%. Had it not been displacement, the two age groups may have been involved in income-generating activities such as handicrafts like basket and mat-weaving as was done in Chiadzwa. Apart from that, the young ones may also have been into small mining activities in diamond fields. Thus, future life, to these age groups, is not likely to be satisfying because they are spending their working-age unemployed. Thus, with employment status being a significant determinant of SWL (Frey & Stutzer, 2002; Stutzer & Frey, 2012), the unemployed IDPs are most likely, as reported here, to report low SWL. Again, with Clark, Diener, Georgellis and Lucas (2003) reporting that being laid off reduces SWL, it, therefore, explains the potential reason for reduced SWL reported by IDPs since they lost their jobs.

Contrary to expectations, income and gender were all found to be insignificant in determining life satisfaction implying that there were no significant differences in life satisfaction among high and low-income earners and male and female-headed households. For income, a possible explanation is that the incomes of the majority of the IDPs are almost the same thus there are no classic differences between many of them. Another possible explanation is that since before displacement, their incomes were from almost similar sources, that is, mat- and basket-weaving and selling, displacement had an almost equal impact on incomes of all households. Therefore, the change in income levels may be considered to be the same across households.

The findings in this study also indicate that household size is a significant determinant of satisfaction with life among IDPs in Arda Transau. That family size increases satisfaction with

life corroborates the familialism theory where one may feel satisfied just because the family members are satisfied with life. Therefore, one will turn to many family members for assistance in times of need. Given a larger family size, the probability of getting the necessary support is likely to be higher unlike in a small family size, *ceteris paribus*.

6.5 Chapter Summary

The findings of the study show that households are generally satisfied with their life in Arda Transau. On the one hand, compared to SWL in Chiadzwa, SWL in Arda Transau is relatively lower. On the other hand, IDPs are likely to be satisfied with future life. This may be taken to imply that SWL will return to its set point since past and future SWL scores are almost the same. Among the main determinants of life satisfaction among IDPs in Arda Transau are household size, social capital, perceived health and perceived area satisfaction. That support from groups and community participation were found to negatively determine SWL is explained in detail using group dynamics. The next chapter gives some closing remarks on the whole thesis with recommendations being among key sections in that chapter.

CHAPTER SEVEN: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

7.1 Introduction

The thesis has, in previous chapters, shown that mining-induced displacement has consequences worth to be studied. It has also highlighted that economic activities and SWL change after displacement. Now, this chapter gives a synthesis of the thesis by summarising and evaluating all the findings and making necessary conclusions. Recommendations are also given as well as suggestions for further studies. Therefore, the chapter is organised as follows: A summary of the thesis is presented first in Section 7.2. Secondly, conclusions on findings are made in Section 7.3 while recommendations follow in Section 7.4. Finally, in Section 7.5, suggestions for future studies are made.

7.2 Summary of the Study

The thesis reports important empirical results that address key research areas in development economics especially development-induced displacement and resettlement as a result of mining projects. Such key research areas reported are economic consequences of mining-induced displacement, economic activities among the displaced and satisfaction with life among the displacees. An economic perspective has been adopted in the analysis unlike in most previous studies. A recap of the studies comprising this thesis is given before the conclusions are made.

Increased mass population displacement has raised concerns globally for more than three decades with several studies being done in that area. Concerns have been raised over the neglect by economists on the internal displacement aspect of economic development and welfare of the affected individuals. The risks of displacement have been theoretically outlined in the IRR model by Cernea (1995a; 1997a) from the anthropologist's perspective with a major focus on equity, human rights and social justice. In this regard, Cernea (1995a; 1997a; 1999a; 1999b) and Caspary (2007) called upon professional economists to come on board hence the need for this thesis. Again, Cohen (2000) iterated that the IDPs are a forgotten group in society while both Cohen (2000) and Ferris (2012) acknowledged that, in Africa, IDPs outnumber refugees, hence the need to reconsider IDPs. The sentiments by Cohen (2000) were also echoed by Abdulai (2016) when the author noted that studies of internal migrants have generally been neglected.

Therefore, the goals of the thesis were derived from the fact that studies on internal migrants have been generally neglected by development economists and that economists have relegated the internal displacement issues to other disciplines despite its huge economic bearing. Furthermore, studies on mining-induced displacement are still scarce yet mining-induced displacement is unique (Owen & Kamp, 2015; Owen & Kemp, 2016; Vivoda, Owen & Kemp, 2017a). Again, the study is one of its kind to strictly concentrate on the consequences of mining-induced displacement viewed using the lenses of an economist.

The thesis, therefore, aimed firstly to explore the economic consequences of mining-induced internal displacement among IDPs in Arda Transau. The economic consequences were categorised into the following variables, as adapted from the IRR Model by Cernea (1995a; 1997a): landlessness, joblessness, marginalisation, loss of access to common property, food insecurity, social disintegration, loss of community services and additionally income loss. For analysis of economic consequences of internal displacement, nonparametric models such as Stuart-Maxwell test and McNemar's test were used. The findings indicate that significant losses were incurred by the displaced. These findings are in line with existing literature such as Cernea (1997a; 2000; 2003), Oucho (2005), Magaramombe (2010) and Fiala (2012). In line with findings by Cernea and Schmidt-Soltau (2003), there were some gains derived from being displaced as well, whereby households had access to better road networks and are now closer to amenities like school, clinic and finally a provincial hospital in nearby Mutare town. Additionally, the thesis considered ownership of certain animals prominently owned by rural households in Zimbabwe and as determined by the pilot study. The findings to that effect are that animals such as cattle, goats and chickens were lost by these displacees when they were resettled in Arda Transau. Therefore, considerable losses were incurred by households from the forced migration.

Secondly, the study intended to find out if the economic consequences of internal displacement are gendered. This objective was guided by the arguments by authors, such as Benjamin and Fancy (1998), Hoshour and Kalafut (2007) and Mutopo (2011), that consequences of internal displacement are gender-biased and that they mostly affect women other than men. In the thesis,

it was hypothesised that the gender biasedness in consequences depends on things like the type of or perspective from which consequences are viewed and economic activities engaged in before displacement. For instance, the literature suggests that violent conflicts usually directly affect women more than men unlike indirect effects which may affect men more than women. To determine whether economic consequences are gendered, a chi-squared test of independence was mostly applied and findings indicate no significant gender differences. Therefore, the results contradict existing literature. This may be possible because of, among others, activities that were done in the previous location. Both males and females were engaged in the same activities such as basket and mat-weaving, sometimes collectively termed as handicraft, so displacement led to the same effects on this economic activity and source of income to both groups.

As a third objective, the thesis aimed at finding determinants of the choice of economic activities and diversification of agricultural activities among the displaced families. Extant literature shows that research on determinants of the choice of economic activities among IDPs is still scant. To find the determinants of the choice of main economic activity done by IDPs, a multinomial logit model was used and results show that economic activities before displacement, gender and marital status of household head are significant determinants of the choice of post-displacement main economic activity. That the main economic activity done by households before displacement was found to be the main determinant of post-displacement economic activity means that experience is the most important variable in choosing a coping strategy. Equally important was the duration of stay in Arda Transau again revealing some experience acquired in the new location.

The findings from the thesis show that agriculture is the most common coping strategy and that diversification is minimal among IDPs in Arda Transau. However, animal disposal has increased and was reported by 58% of IDPs in Arda Transau. The main determinant of choosing petty-trading activity over farming was found to be marital status with IDPs who are currently married being more likely to engage in petty-trading than farming. Again, being a female-headed household increased the probability that a family will choose petty-trading as a major economic activity than farming.

An ordered logit model was used to find the determinants of agricultural diversification. Results from the Ordered Logit model reveal that gender, age, religion and previous economic activities done by households, all significantly determine agricultural diversification. It was also shown that the one-hectare arable land given to the IDPs is being put to use, though not intensively possibly because of resource constraints. Conclusively, experience gained before displacement, as shown by pre-displacement economic activities, is significant in determining both current economic activity and horizontal diversification. Equally important is the experience gained in post-displacement location.

Finally, the thesis aimed to quantify SWL and explore the determinants of SWL among internally displaced persons in Arda Transau. The findings show that IDPs are currently satisfied with life in Arda Transau but average SWL score in Arda Transau is currently lower than that in Chiadzwa and predicted future SWL. The difference between SWL in Chiadzwa and Arda Transau was also found to be statistically significant. A general to specific modelling approach to modelling life satisfaction was used. From the specific model used, results indicate that household size and neighbourhood characteristics are significant positive determinants of the current level of life satisfaction. However, social relations reduced life satisfaction among the IDPs as revealed by a negative coefficient on the community participation variable. For the future level of SWL, neighbourhood characteristics and social support from individuals significantly and positively determine life satisfaction while support from groups significantly reduces SWL among the IDPs studied. The negative effects of community participation and support from groups were explained along the group dynamics arguments.

7.3 Conclusions

Based on the afore-mentioned summarised objectives and findings, several conclusions are made. These conclusions are made concerning their applicability to the study at hand and related ones. Therefore, this section presents these conclusions.

Chapter Four of the thesis outlined the economic consequences of internal displacement and applied Stuart-Maxwell test, among other tests as methods of analysis. Findings show that households in Arda Transau surely are victims of mining-induced displacement because they

were found to have suffered from several consequences like marginalisation, food insecurity and have lost both employment and land, *inter alia*. These findings are in line with a great deal of existing literature which found that displacement leads to several losses (Cernea, 1995a; 1995b; 1997a; 1997c; Mburugu, 1994; Hughes, 2006).

Thus, the thesis concludes that from economics perspectives, even mining-induced displacement leads to the impoverishment of the displaced in the sense that the welfare of the displaced will be worse off than before as found in Chapter Six on life satisfaction. For instance, Chapter Four shows that consumption has reduced after displacement than before indicating food insecurity as perceived from food access side. Households have lost animals on which they relied in times of need before displacement. In Chiadzwa, animals were treated as an *ex-ante* risk management strategy, where households would sell their animals when drought befalls the household or any other need arises such as school fees for children. Therefore, mining-induced displacement must not be unnecessarily ignored in research.

For landlessness, the thesis found that on average households have a smaller piece of land but that piece of land is more productive than the larger one owned before displacement. The conclusion made is that households may be considered landless because, though the soil is a little more fertile, the required inputs for the land to be as productive as it can are beyond the financial reach of the displaced as revealed through discussions with households. For instance, artificial fertiliser was said to be relatively expensive for the IDPs especially given that on average they earned way less than US\$100 per month. Viewed differently, if these inputs were affordable to the households the results would have been reversed where households would have not been considered landless and also food security would have been enhanced. However, the assertion that consequences of displacement can stretch for generations may be valid here. Considering the land size, viewed from inheritance perspective, it may mean that as the second generation of IDPs grows to be mature households, they have to inherit land from their parents implying a further division of the small land now owned. Thus, the situation will be worse in future unlike now.

The combined effects of land size loss and losses in size of animal herds may be the possible leading factor to households' food insecurity. If animals had not been lost, organic fertiliser may have been substituted for the artificial one thereby enhancing food production leading to reduced vulnerability to food insecurity. The finding on landlessness seems to confirm Cernea's claim that landlessness is the major consequence of displacement because it leads to decapitalisation and pauperisation of the displaced persons. This seems so because the study established that after losing land, many households also lost their income-generating capacity from self-employment leading to food insecurity. This could also be argued to be exacerbated by the loss of common property resource, where common forested and grazing land were both lost.

The fact that agricultural land has been lost is likely to exacerbate the link between food security and agriculture, as stated in the previous paragraph. In Africa, food security has been noted to be a rural phenomenon with more rural folks being more food insecure than their urban counterparts (NEPAD, 2013). This has been attributed to lack of access to means of production such as land and relevant inputs such as manure. Therefore, displacements leading to loss of land and animals worsen the situation that already is in a dire state. Therefore, contrary to Section 72 of the Constitution of Zimbabwe Amendment (No. 20) Act of (2013), the Government has led to landlessness yet the section's provision is that all individuals have the right to agricultural land. The effect of landlessness is likely to worsen with second and third generations since they will inherit smaller and smaller pieces of land, justifying the assertion by Cernea (1997a) that effects of forced migration affect several generations. This problem of landlessness for future generations in Arda Transau may only be minimised by migrating to other areas. This can, however, create another tragedy of commons in those host communities.

Contrary to existing literature, Mutopo (2011), for example, that displacement effects are gendered, the thesis has shown that in Arda Transau no significant gender differences exist. The implication is that displacement did not affect these two groups of households differently. Possible reasons were given for example, in the case of landlessness, in Arda Transau land was allocated irrespective of the gender of household head since all households were given a hectare of arable land which was allocated randomly. Again, the sources of income in Chiadzwa were the same across households; therefore, no reasonable differences could be expected across

gender. Although, this study did not test for differences between male- and female-headed households in terms of how houses were allocated, indications are that all households were treated equally in the allocation of houses with each displaced household being allocated a house with the same number of rooms as others, on the one-hectare land given to the household, irrespective of the gender of the household head. However, overcrowdedness was indicated by study participants. Overcrowdedness could, therefore, be considered partial homelessness in the sense of Cernea (1997a)'s IRR model.

The results from Chapter Five of the thesis show that households in Arda Transau employ agriculture as the major economic activity. In this respect, food crop cultivation dominated, though households were found to be food insecure. Thus, the majority of households were not diversified. Although specialisation has been argued to increase efficiency, it has however been noted that crop diversification reduces exposure to risk (Rapsomanikis, 2015). Mixed cropping is a form of diversification that is common in Zimbabwe among other African countries (Rapsomanikis, 2015), but IDPs in Arda Transau have not tamed the benefits that may be derived from it. Such benefits include reduced crop failure and problems of pests. While households have lost land, intensive agriculture, even through crop diversification, may have reduced the effects of landlessness among IDPs in Arda Transau. In line with Sen (1962)'s claim on the inverse relationship between land size and productivity, Rapsomanikis (2015) showed that smallholder farmers' yield per hectare is relatively higher than those of large scale farmers. For instance, Rapsomanikis (2015) showed that in Tanzania 0.9 hectares yield on average food worth \$780 per hectare as compared to \$281 per hectare produced by a large farmer owning 4.1 hectares. In this regard then, if IDPs are to intensify their activities, they are likely to be food self-sufficient hence end up being food secure despite the small landholdings after displacement. Therefore, IDPs in Arda Transau are advised to intensify their agricultural activities, wherever possible, especially through intercropping.

One of the key findings from Chapter Four is that slightly less than half (48%) of the displaced households showed a willingness to stay in Arda Transau even if given choices to leave. Based on this result, further probing for satisfaction with life in Arda Transau was initiated. Thus, Chapter Six of the thesis looked at life satisfaction among IDPs in Arda Transau. The findings

indicate a significant difference between pre-and post-displacement SWL scores with some individuals being satisfied with life during the two periods. Pre-displacement life was considered slightly more satisfying than current life. However, future life satisfaction was found to be likely to be even better than that before displacement, possibly because of adaptation to the environment. It can probably be concluded that the set point theory of SWL is likely to hold among these IDPs. Again, one could conclude that IDPs would prefer to live in Arda Transau even if they are given an option to relocate. Perhaps, this is because of the climate and soil type in Arda Transau, access to amenities in the area and also the social capital, which exists between some neighbours, built long before displacement. Just like in most African countries, in Zimbabwe, it is common for neighbours to borrow from or lend, even items like mealie-meal, to others based on social networks, at no interest or any other costs attached. It, therefore, implies that should one migrate to other places, this social capital is most likely to be lost and therefore take longer to build a new one.

Another possible interpretation of a relatively high SWL score in post-displacement location is that the IDPs may be in line with the social comparison theory by Festinger (1954) which is a version of the hedonic subjective well-being perspective. Since these individuals have been residing in the same vicinity before displacement, they are likely to compare themselves to significant others who happen to be their neighbours. Based on that comparison, the IDPs may find no real difference between themselves and their neighbours hence will report being satisfied with life. This statement implies the weak form of the downward comparison theory where an individual in a particular situation enhances their satisfaction with life by comparing themselves with an equally unfortunate other person (Wills, 1981; Taylor & Lobel, 1986; Wood, 1986). Wills (1981) noted that, contrary to the weak form, the strong form of the downward comparison theory states that one compares themselves with those individuals who are less fortunate than themselves and, therefore, is likely to report being satisfied with life.

Again, possibly study participants used the 'unidirectional drive upward' version of the social comparison theory in determining their level of future life satisfaction. In this version, individuals compare themselves to their current status and therefore aim to surpass that level. It

is, therefore, possible that the IDPs feel the pressure to continually improve their SWL, hence would likely perceive a more satisfying future life.

A third possible interpretation for the level of life satisfaction can be from the convergence theory. It may be possible that IDPs' level of life satisfaction has converged to the level assumed by the host community. Given that pre-displacement scores were relatively high, the reduction may be a result of convergence to the prevailing level in the host community. However, given that convergence was not tested, this conclusion needs to be treated with caution.

To find the determinants of SWL, an ordered logit model was applied and findings show that social capital is one of the major determinants of life satisfaction among IDPs. Thus, despite social capital being largely ignored in the literature, it plays a significant role since for both current and future life satisfaction the variable was found mostly statistically significant. Thus, those households who have a high degree of social capital can be considered to have more access to resources hence their satisfaction with life after displacement is higher as compared to colleagues who are not well networked. This result may be considered to be consistent with findings by Lim and Putnam (2010) who established that religious individuals are more satisfied with their lives than those who are not religious. Engagement in religious activities is a good proxy for social capital hence those who are religious are likely to have a high level of social capital because they build relationships as they gather for religious purposes.

Another significant finding is that the IDPs consider Arda Transau to be a relatively better place to be. This was revealed by a significant p-value for the area satisfaction (a proxy for neighbourhood characteristics) in the current and future life satisfaction models. In this respect, one can deduce that despite having suffered economic consequences of displacement, IDPs in Arda Transau find the area to be habitable given the amenities in the area. From the results, it was established, for instance, that the roads in Arda Transau are better than those in Chiadzwa which was considered a positive move by IDPs. In this context, therefore, one can be compelled to accord the SWL in the current area to what Veenhoven (1995) termed livability or what Bergson termed characteristics of the environment (Baujard, 2013). One, however, has to note that "[l]ivability is not a quality of individuals but environments or societies, and refers to the

extent that these allow satisfaction of human needs and hence well-being" (Brey, 2012, p.11). Therefore, for one to be satisfied with the conditions prevailing in the post-displacement location, they must consider it livable. However, it is also possible that despite the area having a high degree of livability, people may not make good use of the resources available and, therefore, report lower SWL.

Another significant conclusion one is compelled to reach is that IDP households are satisfied with life because of support from family members especially children. It was revealed that support from children has been significantly determined by age and that support from individuals is a significant determinant of life satisfaction. Therefore, it may be plausible to conclude that the support from individuals which was found to determine satisfaction with life might be from the children of that particular family since support from groups was inversely related to satisfaction with life.

To crown it all, the thesis managed to conclude that displacement of households from Chiadzwa to Arda Transau led to economic consequences that could, in turn, be interpreted to have affected economic activities and life satisfaction among the displaced. It was established that after losing their economic assets thereby affecting what Sen (1982) termed entitlement, IDPs sought new coping strategies and also their life satisfaction fell below the pre-displacement levels. Sen (1982) noted that lack of ability to command food leads households to starve. In line with this statement, the thesis notes that households cannot command food because of certain reasons such as lack of income and resources such as inputs. Therefore, poverty has ensued, understood as deprivation from the capability to live a good life (Wells, 2013), after displacement. However, the IDPs perceive future life satisfaction to be likely high due to the environment in which they find themselves whose neighbourhood characteristics are favourable to them. Also, possibly because of the use of social capital, the IDPs are relatively on the average life satisfaction score in the current area.

On the whole, one can deduce from this study that land plays a central role to livelihood, mostly in rural-based economies as noted by McCallin (n.d). Again, sustainable livelihoods literature views land as natural capital, therefore, loss of land is tantamount to a loss of capital (Scoones,

1998; Krantz, 2001). Due to this centrality, the loss of land is likely to have ripple effects enunciated in this thesis. Such effects include, but are not limited to, joblessness, food insecurity and loss of common property resources. Because of these losses, McCallin (n.d) noted that most land disputes escalate into armed conflicts such as what happened in Zimbabwe (Sachikonye, 2004).

It is imperative to also note that study findings failed to confirm the gender differences associated with displacement. This was justified by the fact that the mining companies did not consider the gender of households when deciding who to displace and also when allocating houses. Another possibility is that in most displacements, especially those involving violent conflicts, women are more exposed than males because men are quick to flee than women unlike in development-induced displacements such as the Arda Transau case. This, possibly, is because men may be the target thereby justifying their fleeing from violent conflicts. Also, women are mostly subjected to various gendered consequences like gender-based violence and rape whereas in Arda Transau IDPs there was nothing of that sort.

The thesis is among the few studies, if not the only one, to have looked at displacement issues from economic consequences through to life satisfaction among IDPs *via* economic activities of the displaced. In as far as life satisfaction among IDPs is concerned very few studies have included social capital as a determinant. So the thesis is in the right direction to add to the existing body of knowledge by doing so. To extend the literature on the consequences of internal displacement, the thesis focussed on the consequences of mining-induced displacement from an economics perspective as a response to calls from other disciplines such as anthropology as shown in Cernea (1995a; 1997a; 1997c). Also, the case in point is unique in that the IDPs are not in IDP camps but have houses built for them hence the probability of being displaced again is low and no possibility of returning to Chiadzwa could be seen, at least soon. Along the lines of coping strategies, the thesis is unique in that it aimed at looking at what determines the choice of a particular activity unlike the majority of existing literature which considered only the usage of the coping strategies, for instance, Bello, Daoud and Baig (2014) and Israel and Briones (2014).

The thesis can be noted to hinge on the attribution theory which notes that anything has a cause and, therefore, people are concerned with finding these causal relationships. The theory also notes that individuals are accurate in their attribution of cause to effects. With that in mind, therefore, the study argued that changes in life satisfaction and economic activities are a result of displacement. Along the Pareto principle arguments, this displacement has been found to lead to some negative consequences which made IDPs worse off in a bid to make the nation better off through mineral exports.

The IRR model by Cernea was equally important in this study. Although from an anthropological background, the model was adapted and applied in economics and was found useful. Therefore, the risk and reconstruction model remains a working horse in internal displacement studies because it has managed to withstand the test of time and has been useful across disciplines. However, it may be plausible to add, to the IRR model, economic activities and SWL as other consequences.

From the purview of the capabilities theory, the thesis can be taken to have found that households have lost their capabilities. According to Sen (1999; 2008), capabilities enable one to choose a life they have reason to live. This includes the opportunities and incomes, among others. Thus, development, taken as capabilities expansion, cannot be attained when poverty, taken as capability deprivation, is not eradicated. Mining-induced displacement led to poverty, which is a capability deprivation as shown by results on the economic consequences of displacement. For example, the thesis found a loss in income of which income reduces the probability of someone being food insecure or even worse starvation. Income also has the potential to increase someone's ability to choose what to consume since his or her budget is constrained by income (Sen, 1992; 2008). The loss of income, on its own, is an indication of capability deprivation. Therefore, development, espoused from mining-induced displacement remains questionable when development is supposed to increase capability expansion but leads to capability deprivation.

Again, from the household's triangle of capabilities, assets and economic activities, one would argue that the losses in assets established in the thesis have the potential to affect economic

activities. However, because the loss of assets, which may be viewed as functioning (Sen 1993), has an impact on capabilities (Sen, 1999; 2008), it means households have been deprived of their capabilities from the poverty perspective. This loss of capabilities can also be viewed from the thesis through the change in economic activities whereby those households who previously relied on self-employment are now unemployed because of displacement. This perspective may be the reason why IDPs had reason to value the life they led in Chiadzwa unlike what planners might have had in mind about them in Arda Transau.

7.4 Recommendations

With the summary of findings and conclusions having been presented now, the thesis presents its policy recommendations based on the conclusions made in Section 7.3. This section is divided into two main parts. The first part is organised according to the format the thesis has taken where recommendations on economic consequences of mining-induced displacement are presented first followed by those on economic activities among IDPs and finally on SWL. The second uses an integrated approach where the three aspects are now combined and recommendations are derived from the whole thesis.

7.4.1 Sections Specific Recommendations

In this section, recommendations specific to a particular aspect considered are given. These are broken down into those on mining-induced displacement consequences, economic activities and SWL.

i. Recommendations on Consequences of Displacement

As a form of recommendation, the thesis suggests that whenever any government, business or responsible authority wants to displace people, there is need to consider the short and long term effects as espoused in the thesis. It is of great importance to note that displacement's effects can stretch for generations, hence the need to put people first as noted by Cernea (1985; 1991). It seems most governments ignore the implications proposed by Pareto efficiency when deciding on development-induced displacement. Therefore, these implications may be put on the discussion table before a final decision on uprooting people is made.

From the findings, the study recommends that despite being argued to be beneficial to the majority, the outcry of the minority needs to be heard because the development project may be

undercutting its rationale (de Wet, 2001). The displaced in Arda Transau are facing problems of food insecurity, therefore the government, mining companies and donor community may intervene to improve the food situation in the area. The idea to introduce an irrigation scheme in the area is a move in the right direction that may improve economic activity and food security situation in the area. However, the problem is that the families do not have the income to pay for the irrigation water. Some do not even have the funds to pay the required joining fee of about US\$5 (disclosed by participants as at the time of data collection). Maybe the Government or ZCDC may intervene by paying for these families and then allow them to pay for water charges after the first harvest from the irrigation scheme, *ceteris paribus*.

Since the land allocated to the families (one hectare) is relatively small, compared to previous land holdings, according to the findings, the government may avail more land within the surrounding areas so that families may use it for agricultural purposes. This will reduce the effects of landlessness. However, the challenge with this approach is that the surrounding areas are already occupied by other families. By appropriating this land, the Government will be creating another displacement problem to the host community. So the land question remains a big issue in Zimbabwe with no clear solution. The reason for the failure to get a solution is that the demand for land is increasing while the good (land) is rival. Another possibility to alleviate landlessness is to provide inputs that match the requirements of the soil. This will raise the output of the households since they claim that the land is more fertile but failure to provide the required input exacerbates the effects of landlessness and or food insecurity.

The low-income levels earned in the area is possibly the major factor contributing to the inability to afford inputs, particularly agricultural inputs. Given this scenario, the government is advised to provide some vocational training, at no or low costs to the displaced, which will enhance household income-generating abilities. Entrepreneurship courses may also be the way forward. This will make the IDPs somehow self-sustaining again despite having lost some skills.

Households revealed having been denied credit after displacement. The study proposes that since this decapitalises the households, a government-funded micro-finance institution just like Woman's Bank, be established to cater for the displaced. This will only operate in areas where the displaced are relocated to. The loans offered, at favourable interest rates, may be meant for

income generation only and not for consumption purposes. The officials of the financial institution must make sure that they visit often to the proposed project area to make sure funds are used for the purpose they were applied and approved for, thereby minimising the moral hazard problem.

Another approach to reducing the effects of loss of credit is the use of rotating savings and credit associations (ROSCAs) by IDPs. Under ROSCAs, people pool funds together which they award, in rotation, to each member at each meeting that they hold. Normally, these meetings are held once a month (Coleman, 1988). The understanding is that once awarded the money, the recipient makes use of that money to raise more money. By so doing economic activity is enhanced and, therefore, the proceeds can be used to enhance livelihoods. As Coleman (1988) notes, the good thing about these ROSCAs is that they are composed of members who are socially connected. While Mushuku and Mayisa (2014) found that ROSCA members in Gutu accumulated assets and used ROSCAs as precautionary saving approaches, Cheruiyot, Cheruiyot, and Yegon (2016) established that these ROSCAs enabled households to acquire financial, physical, social and human assets. Kedir, Disney, and Dasgupta (2011) noted that ROSCAs do not necessarily mean that formal sources of credit are dismantled but the two can coexist. With such a method, loss of credit by IDPs may not be a big issue because its effects will have been mitigated.

Loss of credit can also be minimised through village savings and loans associations. Along a similar line of reasoning, Ksoll, Lilleor, Lonborg and Rasmussen, (2016, p.70) said: "[s]etting up Village Savings and Loans Associations (VSLAs) has become an increasingly widespread intervention aimed at improving local financial intermediation". This form of financial intermediation will improve IDPs' access to finance and therefore financial inclusion. Mwansakilwa, Tembo, Zulu and Wamulume (2017) and Solange and Mulyungi (2018) concur that VSLAs reduce poverty among households by increasing household income. Given the existing usage of social capital among the studied IDPs, the VSLAs will most likely benefit many of these IDPs. Conclusively, Shaaban (2019) found that both ROSCAs and VSLAs have managed to solve many financial problems among Egyptian families.

The findings indicate that a significant number of households are now jobless. It was also established that the majority of the jobless individuals have moved from being self-employed to being unemployed as reflected by Table 4.5. Based on these findings, it implies that the now Arda Transau residents are hardworking households, because despite the high unemployment in the country they found some economic activities to do in the pre-displacement location, and their displacement led them to be decapitalised through the loss of land and this self-employment. It is therefore prudent to advise the responsible authorities to make available the resources and environment conducive for income-generating projects, as was done in Indonesia (Eriksen, 1999). Also as part of restitution, the Colombian and Somali governments have each embarked on facilitating income-generating projects and providing financial support (McCallin, n.d), an approach which the Government of Zimbabwe can adopt and or adapt. Despite having lost a skill learnt over time, these residents still indicated an interest in new areas of business ventures to sustain themselves. For instance, they were willing to engage themselves in new areas of agriculture different from what they were used to do. It was discovered that the households were willing to join the irrigation scheme which was to be launched but they did not have money to do so. The requirement of a US\$5 joining fee was the major hindrance. So given their low incomes, this worsens the situation in the sense that they cannot venture into such income-generating projects. Removing the joining fee may be a good move to rehabilitate the households through activities such as market-gardening.

The research findings also indicate that households are food insecure. This is against the provisions of Section 77 of the Constitution of Zimbabwe Amendment (No.20) Act of (2013), the Zimbabwe Agenda for Sustainable Socio-Economic Transformation (ZimAsset) cluster on food security (Cluster 7.1) and the UN Guiding Principle 18 (2)a. Contrary to these provisions, the government was noted to deny the IDPs access to food even from Non-Governmental Organisations which implies discrimination giving rise to marginalisation. This discrimination from humanitarian assistance again goes against the UN Guiding Principles 24(1) and 25 (3). Therefore, in line with the Constitution of Zimbabwe, ZimAsset Cluster 7.1 and the UN Guiding Principles on Internal Displacement, the Government of Zimbabwe is recommended to ensure food security for the displaced households. This may be through the provision of farming inputs using the presidential inputs scheme or food handouts. As at the time of data gathering, no such

inputs and handouts were availed to the IDPs. Again allowing NGOs to provide food assistance leads to compliance with the UN Guiding Principle 25 (2 & 3) thereby improving food security of IDPs as enunciated in UN Guiding Principle 18 (2)a.

Food shortages also have ripple effects such as malnutrition. Therefore, to alleviate such a possible problem, it is proposed that the government may consider allowing food distributions by the donor community in the area just as is done in other areas. During interviews with the residents, it was revealed that the donor community was not allowed to do any activity in the area. This, therefore, exacerbates the effects of marginalisation. As revealed, the households are already marginalised; therefore by denying donor support this worsens the situation. Surprisingly this is against the ZimAsset food security cluster (Cluster 7.1) which aimed to provide food relief to vulnerable social groups (Government of Zimbabwe, 2013). The Government or donor community (if allowed) is also recommended to start the so-called food for work programs. In this attempt, the community may be food secure in the short-run. This will reduce problems of having less than three meals a day or reducing meal portions as found in the study.

The long term solution, however, is difficult to come by given the land required. It may be to provide a larger piece of land for those households that are willing to relocate. Since almost half the residents' population was found to be willing to relocate, a significant number will benefit from this move. It, however, depends on the area to which they will be relocated. If moved to less fertile soils, the problem is likely to persist. However, if moved to fertile lands, these displacees have the potential to turnaround their lives through agriculture, thereby fast-tracking their rehabilitation.

The Government is also recommended to repair some problematic boreholes from which the households get their water. The rusty water fetched by the households is a health hazard that may even cost more than just repairing the boreholes. If the households could afford that, they would have been recommended to do so themselves. However, given the meagre monthly earnings they get which cannot even sustain their other needs, this remains a dream. Thus, families opt to get water from faraway boreholes than those within their vicinity. Access to clean and safe water is a human right, therefore, the government is recommended to make this available.

The findings indicate a reduction in the quality of education. However, the majority of the teachers at Chirasika Primary School have been teaching at schools in the previous location. It is, therefore, some other factors other than teachers that are contributing to lower quality. One possible reason is over enrolment. It is therefore recommended that the government and or ZCDC build schools just like Anjin Investments did. This will ease pressure on one school's enrolment. Also, the building of some classroom blocks at Wellington Primary School by Mbada Diamonds is a welcome development that needs to be furthered to mitigate mass enrolments.

About security of ownership, households feel the need for title deeds to the land they occupy. It is, therefore, recommended that through government assistance, these households be given titles to the pieces of land they occupy. These title deeds may be obtained at low or no cost since the land occupied is state land.

In this study, the findings indicate that displacees have lost in terms of almost all economic variables considered as a result of mining-induced displacement. From neoliberal economics views, development is thought to benefit every individual. Being the ones directly affected, the displacees are supposed to be the priority group. In Arda Transau these people have been relegated to the peripheries, hence the outcry. Despite the instituted Community Share Ownership Trust, the displacees have been left out. The Community Share Ownership Trust arrangement is that these Trusts benefit those people in the surrounding areas of the mining area. This means that the displaced, who may be placed further away from the actual mining venue, will not benefit. Thus, this move externalises the cost of development-induced displacement. Therefore, the government is advised to extend the benefits from Community Share Ownership Trust to the displacees wherever they may be located if possible.

In establishing the irrigation project, the government may have wanted to use the strategy used in Senegal where displacees were granted irrigated land as noted by Bilak *et al.* (2016). However, the displacees in Arda Transau are required to pay a joining fee, which they cannot afford, the same way that resettlers in Mozambique could not afford electricity (Arnall, Thomas, Twyman & Liverman, 2013). The Government, therefore, is recommended to assist by removing the joining fee or paying the amount on behalf of the IDPs. The Government will then recover the

money after the irrigation has started and income is being generated by the farmers from harvesting the irrigated farm-produce.

The state can also use the approach used in Norway whereby the Norwegian government gave, to the displacees, a certain percentage of revenue raised from the electricity that caused the displacement (Bilak *et al.*, 2016). Therefore, in Norway, Canada and Japan the governments enacted the benefit-sharing mechanism for hydropower project displacees (Cernea, 2008). Thus, the Government of Zimbabwe is recommended to give a certain percentage of diamond proceeds to the displacees as a form of compensation or benefit-sharing portion. However, most governments have not honoured their compensation promises. For instance, Nayak (2000) noted that forty years after displacement, households in Orissa had not received their promised compensation.

Conclusively, the government is advised to consider and quantify the possible consequences of displacement before displacement takes place. The evaluation of the costs of displacement will enable the planning authorities to foresee the consequences and plan for it. They are also advised to first have the funds and all relevant requisites in place before displacing people. Consideration of land size lost, size of land to be allocated, even income earned before displacement and even assessments of soil requirements in the destination area may all be done before displacing people. The affected parties may also be included in all these processes so that they feel the need to move. The use of force to move individuals is highly discouraged as it causes a lot of human rights violations as evidenced by literature from anthropology, Cernea being a major figure.

For all the above to be viable, there is a need, above all, for political will. The political dynamics of the day may consider being willing to take a step further in alleviating effects of displacement and improve the lives of those already displaced such as Arda Transau residents. Without political will, nothing will come out to assist the voiceless by bringing durable solutions to this global menace.

ii. Recommendations on Economic Activities

Given that the IDPs in Arda Transau are mainly into food crop cultivation, the Government of Zimbabwe is urged to supply agricultural inputs to the Arda Transau residents. Such assistance has not been given even inputs from the presidential input scheme which is supposed to be given

without discrimination based on any criteria like, gender, residential status, tribe or ethnicity. This input scheme will likely enhance economic activity and, therefore, boost household food security among the displaced. By being denied access to the presidential input scheme, IDPs can be considered being marginalised. Therefore, the government is urged to avoid marginalisation of the displaced because of their IDP status. Such marginalisation has been common among IDPs in Zimbabwe as also indicated by Sachikonye (2003b).

IDPs in Arda Transau are advised, wherever possible, to avoid the use of erosive coping strategies such as asset disposal, but instead, use sustainable strategies. This is because "...sustainable livelihoods also provide the resources and conditions for the enhancement and exercise of capabilities" (Chambers & Conway 1991, p. 6). The use of erosive coping strategies reduces future subsistence base and hence future livelihoods will be more vulnerable. The same applies to use of such abusive strategies such as indiscriminate cutting down of trees for firewood to sell. The future implications are environmental degradation and other associated subsequent effects which are not sustainable.

The benefits from diversification seem to be less understood by IDPs in Arda Transau. The submission of the thesis is that farmers may consider diversifying their economic activities to minimise the risk of failure, especially crop failure. Intercropping may be practised in Arda Transau where a farmer may grow maize concurrently with say groundnuts or beans, a strategy similar to what Scoones (1998) calls intensification. Very few IDPs in Arda Transau were found to have been engaging in both livestock and food crop cultivation yet animals provide the much needed organic fertiliser. Given the level of incomes of the IDPs which makes them unable to afford artificial fertilisers, the concurrent keeping of animals and growing of crops may prove to be a useful alternative. However, this may prove difficult given that families have lost their animals. Be that as it may, most of the IDPs still could afford to keep fowls and get manure for application in their one-hectare arable land. They can also dispose of some of these small animals in times of need. This disposal will be helpful if large numbers of small livestock are kept by these households.

It is, thus, recommended that households may think of desisting from depending much on one agricultural activity. Ganiyu and Omotayo (2016) argue that this approach leads to higher levels of household poverty and food insecurity. Thus, households may diversify as much as possible to reduce the risk associated with one crop, that is, the use of horizontal diversification is advised. Again vertical diversification can be used where households engage in farm and off-farm income-earning activities.

The thesis found that the companies that displaced these households, and the companies' successor, ZCDC, are no longer providing the promised assistance to the displacees. It is recommended that ZCDC and even the government assist these households either through food for work programmes or free food handouts. This is in line with the observation by Levron (2013) that humanitarian assistance has been critical particularly to households without robust social support. However, it was also noted that these humanitarian assistances must not substitute sustainable livelihoods activities. The probable reason is its potential to lead to dependency syndrome.

Religion, as one proxy for social capital, is a significant determinant of diversified agricultural activities. Therefore, the study proposes that households in Arda Transau engage in wider participation in such community associations to get the necessary information on how to make a better living. In these associations, families share ideas which will benefit even the entire community through co-operative behaviour. This can also be used as a channel of transmitting early adoption techniques in agriculture just like what agricultural extension services do.

In future, the to-be displaced households are advised not to deplete their animals when the displacement is imminent. The study proposes that if IDPs had opted for moving their animals to other areas where they have relatives or friends, thereby making use of their social connectedness, IDPs may have been able to sustain themselves through the sale of animals in the worst-case scenario. This approach has also worked for drought-stricken rural areas of Zimbabwe where animals (particularly cattle) were loaned to relatives during drought and retrieved in good seasons.

The findings from the study on economic activities reveal that women are a bit sceptical about engaging in new activities other than men. The study, therefore, recommends that women be quick to change because they may be left behind in most cases if they maintain such a wait and see attitude. This may elongate their impoverishment with men being rehabilitated earlier.

Despite being largely insignificant in this study as a determinant of livelihood activities, education remains a key to sustainable livelihoods. There is a need for education for livelihood-linked capabilities. In this regard, the study proposes that the government (local or national) introduces these livelihood linked educational programs such as the once prominent Master Farmer programme. Though the Master Farmer programme was biased towards agriculture, it can still go a long way in disseminating information to IDPs in Arda Transau who are currently in the experimental stage of their agricultural life and even beyond that area. Thus, agricultural extension services available in other areas are supposed to be availed to these displacees as well.

iii. Recommendations on Satisfaction with Life

The findings of the thesis indicate that household size, social capital and neighbourhood characteristics are significant determinants of satisfaction with life among IDPs in Arda Transau. On the aspect of household size, the families are encouraged to make sure that the children get the necessary education to adopt to future life needs. This education will enable them to understand the dynamics of polygamous families. In that respect, they help maintain life satisfaction of the large family size. Also, this will help the older children to take care of their siblings as is the norm in the African culture. This will, therefore, maintain family unity and happiness. It also enhances future life satisfaction since support from individuals, as a social capital element, was found to increase life satisfaction. In this regard, once a family can give support to fellow members, life satisfaction may improve.

Some social capital components have shown a statistically significant relationship with satisfaction with life. However, some have shown an unexpected sign such as joining with community members to solve a problem, sometimes called community participation. The expectation is that joining with others will increase life satisfaction, however, this was found to reduce life satisfaction. In line with this argument, Social Development (2013) noted that social

networks among IDPs can sometimes be weak. Coleman (1988) also argued that social capital can have detrimental effects in that the social capital may direct efforts in the direction some members may not be interested in. Thus, the reasons why some components for social capital are weak or insignificant determinants of life satisfaction may be emanating from this line of thought. The study, therefore, recommends that the IDPs strengthen their networks to get the best of these networks since social capital has outclassed most of the determinants of life satisfaction among IDPs in Arda Transau. The leadership in the area is recommended to carry out a series of conversations with residents to find out what IDPs want to be done in the area. This will pave way for discussions at the group level to maximise benefits from group interactions. This will again make individuals open up their minds and be heard. This strategy may work well if pursued from religious grounds and then aggregate the findings.

It seems the IDPs do not recognize the value of interactions. Therefore, the study recommends that IDPs value interactions starting with ordinary ones since high levels of social capital may result in positive outcomes in satisfaction with life. If this is attained, it can be used as a lever for improving life satisfaction through discussions aimed at solving problems affecting Arda Transau even if the problems may not be common across areas.

Since neighbourhood characteristics are generally satisfying to the IDPs, it is recommended that the Government and ZCDC take care of the good roads, boreholes, schools and the clinic among other amenities to keep the area in good condition. This will help increase life satisfaction in the future since the residents are optimistic that future life will be better. Allowing these amenities to worsen will reverse the optimism in the IDPs, therefore, potentially reducing SWL.

Again, since findings indicate that IDPs are currently satisfied with Arda Transau area, the implication is that the responsible authorities need to take drastic measures to maintain this satisfaction with life in Arda Transau. For instance, while being satisfied with the area, the IDPs clamour for ownership of the houses they occupy. The Government is recommended to make sure that, at least, these residents get the title deeds for the houses they occupy. This will likely enhance satisfaction with the area since the IDPs, more likely, will feel less threat for possible future displacement.

Additionally, since some of the houses built for these IDPs are leaking and have cracks on the walls, the Government is, therefore, recommended to make sure that these IDPs are safe by ensuring that walls are attended to. Most of the IDPs live from hand to mouth hence cannot afford to hire some builders to mend the walls or carpenters to attend to the roofs. It is, therefore, recommended that the government may consider taking it as its baby to get the relevant experts to attend to these needs. Before displacement, the IDPs could do these repairs on their own because they could afford to sell their animals and hire the necessary experts. Currently, however, they cannot because the majority of the animals they used to dispose have been lost and for those who still have, the animals have reduced in number. By improving the living conditions of these IDPs, their life satisfaction levels are likely to increase as determined by neighbourhood characteristics.

That life satisfaction contributes to economic growth cannot be easily neglected since a happy society tends to be more productive (Keyes, 2006; Ivlevs, 2015) adding to economic growth. In as much as small to medium enterprises in other areas contribute to the national cake so does the economic activities in those areas designated for relocation. Once economic activities in those areas are disturbed, life will never be the same again for the displacees and the IDPs will not, in most cases, be rehabilitated, hence the need for necessary considerations of this action before arguing in favour of the benefits for the majority without due consideration of the minority's welfare. Therefore, attention may be placed on the affected economic activities and potential effects on SWL among IDPs.

7.4.2 Integrated Recommendations

Having outlined and discussed section specific recommendations, an integrated section on recommendations was deemed necessary. Therefore, this section analyses the thesis as a whole and gives recommendations that cut across specific aspects thereby treating the thesis as one, as indicated in the introduction under the conceptual framework.

Having analysed the economic consequences of displacement, economic activities and SWL among IDPs, the thesis proposes a development-led approach to displacement where displacees may not be left out in discussions about their welfare. Thus, as far as displacement is concerned,

IDPs may be considered as key economic actors for development since they are the most affected by development projects. Therefore, development-induced displacement may consider 'putting people first' (Cernea, 1991) thereby being 'people-centred' as Nayak (2000) noted. In line with the development-led approach, Zetter (2015) argues that a development-led approach to displacement responds to the needs of both the displaced and their host communities. By affording that role to IDPs and their hosts, acceptance of DIDR is enhanced therefore reducing the possibility of resistance. It is equally important to use market-led praxis which reduces the negative consequences of internal displacement. Such includes cash transfers which help integrate IDPs into the local market by stimulating consumption whose spill-over effects stretch to host communities. Thus, Zetter (2015, p.2) states that

[m]onetisation of humanitarian assistance recognises the displaced as agents of their economic well-being-not dependent victims- by framing interventions around securing livelihoods, increasing resilience, and making them economic actors engaged in sustainable and self-reliant development.

Thus, a sustainable livelihood approach to IDPs' lives is recommended. In line with the development-led approach, the study advises that the inclusion of the private sector in the development equation for IDPs is important. This helps capacitate IDPs through various development programmes. For instance, the extent of mining-induced displacement consequences in Arda Transau might be attributed to prohibition, by government, of private sector players, such as NGOs, to participate in the rehabilitation of IDPs. These civil society organisations have been found to provide excellent assistance to IDPs in Colombia (Lopez *et al.*, 2011). Kusena (2015) reported that the absence of food aid from NGOs that provided it in Chiadzwa is a result of pledges made by companies before displacing IDPs to Arda Transau. The thesis, therefore, recommends the government-owned ZCDC to meet these pledges or the government to allow NGOs to operate in the area and other related areas.

Cash transfers can also be used to minimise the effects of mining-induced displacement. This method of rehabilitating households provides a steady income stream which reduces the vulnerability of households to new shocks. Also, food security is likely to improve because households may be able to save from these transfers. The International Committee of the Red Cross (ICRC) and International Federation of Red Cross (IFRC) and Red Crescent Societies (RCS)

(2007, p.11) noted that cash transfers have advantages, over other development assistance, such as, they "... can address basic needs and or to protect, establish or re-establish livelihoods or economic productive activities". ICRS, IFRC and RCS (2007) indicate that cash transfers have been useful in areas where employment, economic activities and income have been significantly lost. Such is the case among study participants. This does not mean cash transfer programmes do not have their drawbacks, for instance, the risk of abuse of funds. Therefore, cash transfers may be a good starting point in assisting IDPs in Arda Transau because they have lost income, jobs, and other economic activities.

Another recommendation from this study is restitution. Where resources allow, restitution becomes one of the best approaches to relocation because it leaves the displacee in their original state. According to McCallin (n.d), restitution is preferred for several reasons such as "it leaves open all settlement options" and "it provides justice and redress for dispossession and forced displacement" (McCallin, n.d, p.14). In the event of restitution, households will be able even to decide on where to resettle because these IDPs may now have the purchasing power gained from the restitution process. McCallin (*ibid*) also notes that restitution can appease resentment among the displaced.

Although compensation has been advocated for, as also done in this thesis, it is not without its misgivings. Both Kanbur (2002) and Cernea (2003) give an outline of the compensation criterion's problems. Cernea (2003, pp. 26-27) notes that "... compensation is not just important in resettlement, it is indispensable: full compensation for losses is one of the resettlers' rights and entitlements". Kanbur (2002) argues that if compensation is paid, then no one will be made worse off by mining-induced displacement as can be predicted by the Pareto efficiency criterion. One source of contention about compensation is the source of funds to financial compensation. One way out of this is through the winners paying the losers (Kanbur, 2002) unlike taxing everyone including the disadvantaged. That the compensation fund can come from gainers as suggested by Kaldor (1939) and Kanbur (2002), yields the next question on where do the gainers get the funds. The next paragraph argues for benefits sharing as a way out of this problem.

An additional aspect advocated for by the thesis is benefits sharing. Mining companies in Zimbabwe and the Government of Zimbabwe may consider putting in place a benefits sharing

scheme with the displaced getting a certain proportion of the project's benefits. This at least minimises externalisation of costs of displacement to the displacees. The recommendation for a benefits sharing scheme supports the assertions by the Kaldor-Hicks efficiency criterion that winners in a project must pay the losers. This makes the whole nation remain better off as noted by Ellerman (2014, p.131) that "[s]hifting money around does not change total value". Therefore, since mining is expected to yield net benefits to the nation, by sharing with displacees, the nation and concerned mining companies remain better off as would be displacees. Cernea (2008) noted with concern that benefits sharing has been enunciated in principle but not practised. Therefore, this study affirms that this benefits sharing approach may now be put in practice for rehabilitation of the displaced households in Arda Transau and elsewhere in Zimbabwe. For instance, revenue from diamonds in Chiadzwa could be used to finance the water bills incurred by displaced households, repair houses and electrify the area including the clinic and school. All this will enhance rehabilitation and life satisfaction among displacees in the affected area without increasing costs to the displacees but with mining companies remaining well-off. As noted by Cernea (2008), a benefits sharing scheme reduces financing costs to the companies concerned as well as reducing resistance from the displaced thereby facilitating the quick implementation of the project. As such, the use of benefits sharing will go a long way in attaining a 'people-centred' development project. Also, Cernea (2004) noted that the majority of the people who are displaced by development projects are poor, so by externalising the costs of the projects, companies concerned will be worsening the situation. It is, therefore, important to share the project benefits to, at least, uplift livelihoods of the displaced. Therefore, ZCDC may consider employing a benefits sharing scheme for IDPs in Arda Transau. Also in future, the Government can set out rules that make sure companies intending to displace people employ this strategy.

From the social capital perspective, it is recommended that IDPs in Arda Transau, maintain their social fabric even with their colleagues who remained in Chiadzwa. This is important since a household will, at least, have someone to lean on in times of need. It was found that maintaining social fabric worked well in rehabilitating Eritrean returnees (Sorensen, 2000). Of note also from the Eritrean case is the role that the government and NGOs can play in the rehabilitation process.

Having said all this, the statement by Deng (2001) still holds in the case of Arda Transau IDPs. Deng (2001, *n. p*⁵.) said “[n]early always they (*referring to IDPs*⁶) suffer from severe deprivation, hardship and discrimination”. From the study, it was found that these IDPs have been marginalised and deprived, which are forms of discrimination based on status, among other factors. While other areas were getting assistance from both public and private sources, the IDPs were denied any of such support which is contrary to Principles 1 and 3 of the UN Guiding Principles and Article 4 of the Kampala Convention. This is despite Zimbabwe being a signatory to the UN and Kampala conventions. Therefore, for all recommendations outlined above to work out, there is a need for political will. For instance, on the compensation recommendation, Zimbabwe has been found to lag behind some other countries in attaining international standards (Tagliarino, 2017).

7.5 Suggestions for Further Studies

The thesis does not profess to have exhausted all issues concerning the economic consequences of mining-induced displacement, economic activities and SWL among mining-induced IDPs. It, therefore, acknowledges the limitations and suggestions for further studies. Limitations are presented first followed by suggestions for further studies.

The limitations of the study can be observed, among them being that data for economic consequences and life satisfaction studies were gathered at different times. The period between observations may have given households time to adjust to the consequences, hence report high life satisfaction than might have been reported had data been concurrently gathered. Therefore, in future, such data can be gathered concurrently. The same could also be said about the time between displacement and data gathering. However, because of the arguments posed by the attribution theory and the assertion by Ferrer-i-Carbonell (2013), these variances may be insignificant.

Another limitation of the study is that it was purely focused on displacees. Pearce (1999) noted that there is need for resettlement studies to also focus on host communities since leaving hosts

⁵ No page number

⁶ Own additions

out of the resettlement issues results in unsatisfactory resettlement. However, in as much as this could have been done, the government-owned farm occupied by IDPs in Arda Transau does not host non-displacees on the farm. Possible hosts could be those in surrounding Odzi area. Therefore, in as much as the hosts exist, they seem to occupy surrounding areas only while IDPs are on their own in the farm.

As a suggestion for further research, researchers are advised to study the possibility of SWL leading to economic activities. There is a possibility that the level of SWL may impact on the choice of economic activities by IDPs therefore the need for research on that area exists. Also, given that life satisfaction has fallen after displacement, the study proposes that future studies may explore the possibility of convergence between IDPs' and host community's SWL. This will enable policymakers to establish ways to increase SWL among either the IDPs or the host community so that one will converge to the better of the two. Health convergence theory, however, argues that IDP health converges to the host's level. This, however, may not be the case in areas like Arda Transau because Arda Transau may have better amenities than surrounding areas, especially in access terms.

Additionally, economists are encouraged to continue to grapple with the compensation principle until a point whereby there is a clear-cut approach to the calculation of compensation. As of now, no clear way has been devised although compensation has been extensively argued for in resettlement studies. This might be the source of under-compensation experienced by millions of displacees worldwide.

Another suggestion for further studies is the consideration of mining-induced displacement's economic effects solely on host communities or a comparative study on the host and displaced communities. While, Lopez, Arredondo and Salcedo (2011) attempted it among IDPs in Colombo, no statistical analysis has been done in that study. The thesis, therefore, proposes a statistical approach to the analysis. Also, a study concentrating on host communities before the inflow of displacees is important because it will shed light on what the likely inflow of IDPs will cause in terms of resources demand, *inter alia*. Equally important is a comparative study

including both host and displaced communities. This has the potential for bringing light on what the extent of the problem is between the two groups.

Again, the thesis does not profess to have covered everything as far as the economic activities of the forcibly displaced people are concerned. It, therefore, acknowledges that there is a need to consider other aspects of economic activities among displaced households. Such areas include the need to capture the time dynamism in activities of the displaced. Thus, while the thesis' approach is static, future studies are encouraged to capture the time-varying activities with the time between the time of displacement and certain periods after. This will capture the coping strategy use and possible rehabilitation as propounded by Davies (1993).

As far as satisfaction with life among mining-induced IDPs in Arda Transau is now known, the thesis proposes that future studies be done on the envisaged future life satisfaction reported in the thesis. The respondents reported being optimistic about the future, therefore, a positivist study to confirm the attainment of the level of satisfaction remains. It is possible that with time, IDPs may adapt to the environment, therefore, they may be more satisfied with life. The possibility is also there that households may report lower life satisfaction levels because of exposure to certain hazards, not foreseen during reporting for the current study, which may render the IDPs' rehabilitation nearly impossible. Therefore, there is a need for a follow-up study. However, the time for the follow-up study is not a cast-iron thing.

Also, future studies can explore the use of anchoring vignettes as another possible way of solving the problem of differential item functioning since this was not used. This may help in solving differences in response scales among several groups. As a way out of this, the current study used the interpretation of the size of middle thresholds to reflect that households' interpretation of questionnaires was the same. Although the use of anchoring vignettes may be viewed as a possible way to solve the differential item functioning problem, it has to be noted that anchoring vignettes are not without their weaknesses. For example, Grol-Prokopczyk (2014, p.1) notes that "... respondents often appear to neglect instructions to treat vignette characters as age peers. Furthermore, when vignette characters' sex is matched to respondents' sex, interpretation of sex differences in rating style is rendered problematic".

The thesis, therefore, acknowledges that despite being unique in several ways and in the various definitions of being unique, it has not exhausted everything in mining-induced displacement. Consequently, the room still exists for further studies some of which have been noted here while others remain to be identified with time.

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Appendices

Appendix 1: Economic Consequences of Internal Displacement and Coping Strategies Questionnaire

I am Robson Mandishekwa, a PhD student at Midlands State University in Gweru. I am undertaking a study on “**The economic consequences of internal displacement and the coping strategies of the displaced**”. May you please assist by filling in this questionnaire. The information provided will be treated with maximum confidentiality and will be used for academic purposes only. Should you need more information contact me on 0773 306 935 or mandishekwar@staff.msu.ac.zw. Please do not include your name on the questionnaire. No monetary benefits will accrue from participating in the research.

Section A: Background information

Tick appropriate boxes where necessary.

- 1 Please indicate the company that displaced the household. Anjin DMC
Marange Diamonds
- 2 Age of household head (in years): Less than 20 20-30 31-40 41-50
51- 60 Above 60
- 3 Gender of household head Male Female
- 4 Household head’s marital status: Married Single Divorced
Widowed Never married
- 5 Household size (number of family members) -----
- 6 Household head’s religion: Christian African Tradition Muslim
Others specify-----
- 7 What is the highest level of school that the household head attended: Primary
Secondary Post Secondary
- 8 What is the highest Grade or form that the household head completed at that level:
Grade Form
- 9 Place of origin of household head -----
- 10 For how many years has the family been living in Chiadzwa before displacement?
Below 10 years 10-20 years 21-30 years

Above 30 years Don't remember

11 In which year did the family start living in the current place? (for example 20 12)

Section B: Internal displacement consequences

Tick appropriate boxes where necessary.

1) Please indicate the employment status of the household head before displacement:

Permanent Temporary/Casual Self employed

Not employed

2) Please indicate the employment status of the household head after displacement:

Permanent Temporary/Casual Self employed Not employed

3) Our family had a larger piece of land before displacement than we now have.

Yes No Not sure

4) The land that we had before displacement was more productive than the one we now have. Yes No Not Sure

5) Before displacement we, as a family, ate less than we felt we should eat because we did not have enough money to buy food. Yes No Not sure

6) After displacement we, as a family, eat less than what we feel we should eat because we do not have enough money to buy food. Yes No Not sure

7) Before displacement did you worry that your household would not have enough food?

Yes No

8) After displacement do you worry that your household will not have enough food?

Yes No

9) In the past 12 months, were you ever hungry but did not eat because there wasn't enough money to buy food? Yes No Not sure

10) Displacement affected family access to common grazing land.

Yes No Not sure

11) The quality of grazing land is better here (*Arda Transau*) than in Chiadzwa.

Yes No Not sure

12) Displacement affected our access to forested land for household uses for example firewood. Yes No Not sure

13) Within a year before displacement, we were denied supplies of goods we sold? No Yes Not sure

14) For the goods we bought, we were denied supplies of goods within a year after displacement. No Yes Not sure

15) For the goods we sold we lost customers due to displacement within a year before displacement. No Yes Not sure

16) We were denied credit within a year before displacement. No Yes Not sure

17) We were denied credit within the first year of our stay here. No Yes Not sure

18) The following are the numbers of respective animals that we owned before and own after displacement. (*Fill in spaces provided*).

Animals owned	Before displacement	After displacement
Goats		
Cattle		
Sheep		
Chickens		
Pigs		

19) Indicate your current monthly level of income in United States dollars: Less than \$100 \$101 - \$200 \$201 - \$300 Above \$300

20) How do you compare your current income with the one you earned before relocation? Less than before The same as before More than before

21) Indicate your state of savings after displacement. Savings: Increased Remained the same Reduced

22) What is the approximate distance (*in kilometers*) that you had and have to travel to get to the following? (*write in spaces provided*)

	Before displacement	After displacement
School		
Clinic or hospital		
Drinking water source		
Transport to town		

23) How do you compare the quality of the following in the current area compared to the previous area? (Tick appropriate boxes)

Amenities	Worse than previous.	The same as previous	Better Than previous.
School			
Clinic/Hospital			
Water source			
Transport			

24) Did anyone in the family leave school because of displacement? Yes No

25) What other consequences of displacement have you suffered? List them below.

26) Given an option would you like to stay here forever? Yes No

Give reasons for your answer-----

Section C: Coping strategies

Tick appropriate boxes where necessary.

27) The following are the agricultural activities that we now undertake after displacement: (Tick as many applicable answers as possible)

1. Food crop cultivation. Yes
2. Cash crop cultivation. Yes
3. Livestock production. Yes

28) We were given enough land for our agricultural needs. Yes No

If **Yes** to 28 go to question 30.

29) Do you farm land that is not yours? No Sometimes Always

30) We get support from our children who are working.

No Sometimes Always

31) The main economic activity that our family did for a living before displacement is

32) The main economic activity that our family is now doing for a living after displacement is -----

33) The Company that displaced us gives us support.

Not even once Sometimes Always

34) If your answer to question (33) is **Always or Sometimes** state the type of assistance given:-----

35) Before displacement, we were sometimes forced to sell animals in order to buy food to feed our family. Yes

36) After displacement, we are sometimes forced to sell animals in order to buy food to feed our family. Yes No

37) If the answer to 35 and 36 is both *yes* how do you compare the frequency of animal sales in the two periods? Animal sales: Increased Remained the same
Reduced

38) Before displacement we exchanged goods for other goods.

Not even once Sometimes Always

39) After displacement we exchange goods for other goods.

Not even once Sometimes Always

40) If the answer to 38 and 39 is *sometimes or always*, how do you compare the frequency of exchange of goods? The exchange of goods for other goods :

Increased Remained the same Reduced

41) Due to displacement, we sometimes work in other people's farms in exchange for food and other things: Yes

Thank you very much for your assistance and time. Please check to verify that you did not skip any question.

Appendix 2: Satisfaction With Life Questionnaire

I am Robson Mandishekwa, a PhD student at Midlands State University in Gweru. I am undertaking a study on “**Quantification and Modelling the determinants of life Satisfaction among Internal Displacees in Arda Transau**”. May you please assist by filling in this questionnaire. This should take not more than 30 minutes to answer the questions. Information provided will be treated with maximum confidentiality and will be used for academic purposes only. Should you need more information contact me on 0773306 935 or mandishekwar@staff.msu.ac.zw. Please do not include your name on the questionnaire. No monetary benefits will accrue from participating in the research.

Section A: Background information

Tick appropriate boxes where necessary.

- 1 Please indicate the company that displaced the household. Anjin DMC
Marange Diam Jin An Mbada
- 2 Age of respondent (in years):
- 3 Gender of respondent Male Female
- 4 Marital status: Married Divorced Widowed Never married
- 5 Household size (number of family members) -----
- 6 Highest level of school that the household head attained: Primary Secondary
Post Secondary
- 7 What is the highest Grade or form that the household head completed at that level:
Grade Form Others specify -----
- 8 Household's Employment Status: Permanently Temporary
Self Employed Not Employed
- 9 Indicate your current monthly level of income in United States dollars:
Less than \$100 \$101 - \$200 \$201 - \$300 Above \$300
- 10 How do you compare your income with your neighbours' income? Do you think
it's Less than The same More than
- 11 Household head's religion: Christian African Tradition
Others specify -----
- 12 On average how many times per week do you attend religious gatherings?
 Times.

13 Besides religious group membership, how many other organisational groups do you belong to? *Examples of organisational groups in this question include Burial society & social soccer*

14 **Social Capital Measurement**

iii. In the last 12 months have you been an active member of the any of the following types of groups in your community? *(Tick appropriate box)*

Work related/ trade union	Community association/co-op	Women's group	Political group
Religious group	Credit or funeral group	Sports group	Other specify

iv. In the last 12 months did you receive from the group any emotional help, economic help or assistance in helping you know or do things? *(Tick appropriate box)*

Work related/ trade union	Community association/co-op	Women's group	Political group
Religious group	Credit/ funeral group	Sports group	Other specify

v. In the last 12 months have you received any help or support from any of the following: This could be emotional help, economic help or assistance in helping you know or do things? *(Tick appropriate box)*

Family	Neighbours	Friends who are not neighbours	Community leaders	Others specify
Religious leaders	Politicians	Government officials/civil service	Charitable organizations/ NGO	

- vi. In the last 12 months, have you joined with other community members to address a problem or common issues? Yes No
- vii. In the last 12 months, have you talked with a local authority or governmental organization about problems in the community? Yes No
- viii. In general, can the majority of people in this community be trusted? Yes No
- ix. Do the majority of people in this community generally get along with each other?
Yes No
- x. Do you feel as though you are really a part of this community? Yes No
- xi. Do you think that the majority of people in this community would try to take advantage of you if they got the chance? Yes No

15 Consider the ladder that I am showing you represents where people stand in the neighbourhoods. People define neighbourhoods in different ways, please define it whatever way is most meaningful to you. At the top of the ladder are the people who have the highest standing in their neighbourhood. At the bottom are the people who have the lowest standing in neighbourhood. Considering the living standard of people in your neighbourhood, where would you place yourself on this ladder?

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

16 I have done better in life than the other displacees: No Can't Say
Yes

17 In general would you say your health is: *(Use the following table to answer by ticking the appropriate box.)*

1	2	3	4	5
Very Good	Good	Fair	Bad	Very Bad

18 Do you think your health has improved or worsened because of moving from Chiadzwa to Arda Transau? Improved Remained the Same
Worsened

19 How generally satisfied are you with the area you are living in? (*Tick appropriate box*)

1	2	3
Dissatisfied	Neither Satisfied Nor Dissatisfied	Satisfied

20 Depending on your answer to **Question 19**, what generally are the things that makes this area satisfying or dissatisfying to you? Explain:

21 **SATISFACTION WITH LIFE**

In the following questions you are expected to answer by ticking the box that is applicable to you as an individual. You may agree or disagree with these statements. No answer is considered wrong.

Key for answering the questions

1 = *Strongly Disagree* 2 = *Disagree* 3 = *Slightly Disagree* 4 = *Neither Agree Nor Disagree*
 5 = *Slightly Agree* 6 = *Agree* 7 = *Strongly Agree*

Before Displacement (*Life in Chiadzwa*)

QUESTION	1	2	3	4	5	6	7
If I had my past to live over, I would change nothing							
I am satisfied with my life in Chiadzwa							
My life in Chiadzwa was ideal for me							
The conditions of my life in Chiadzwa were excellent							
I had the important things I wanted in Chiadzwa							

After Displacement (*current life in Arda Transau*)

(Consider your life after displacement holding the current economic and political environment constant).

QUESTION	1	2	3	4	5	6	7
I would change nothing about my current life							
I am satisfied with my current life							
My current life is ideal for me							
The current conditions of my life are excellent							
I have the important things I want right now							

Post Displacement era (*Future Life*)

(Consider your life after displacement holding the likely future economic and political environment constant).

QUESTION	1	2	3	4	5	6	7
There will be nothing that I will want to change about my future							
I will be satisfied with my life in the future							
I expect my future life will be ideal for me							
The conditions of my future life will be excellent							
I will have the important things I want in the future							

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