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FACTORS PREDISPOSING NEVER-MARRIED WOMEN TO HAVE CHILDREN IN NAMIBIA

BY

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A RESEARCH REPORT SUBMITTED TO THE FACULTY OF HUMANITIES, SCHOOL OF SOCIAL SCIENCES, UNIVERSITY OF WITWATERSRAND, JOHANNESBURG, IN THE PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS IN THE FIELD OF DEMOGRAPHY AND POPULATION STUDIES

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SUPERVISOR: PROF. CLIFFORD ODIMEGWU

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DECLARATION

I **Cassandra Simphiwe Nyathi**; declare that this research report is my own work. It is being submitted to the Faculty of Humanities, School of Social Sciences, University of the Witwatersrand, Johannesburg in partial fulfillment of the requirements for the degree of Master of Arts in Demography and Population Studies. I declare that this research has not been submitted before for any other degree or examination in this or any other university.

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Cassandra Simphiwe Nyathi

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DEDICATION

To the Nyathi family who form the foundation of my strength and my redeemer the Almighty God.

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LIST OF ACRONYMS

ASFR: Age Specific Fertility Rate

CBS: Central Bureau of Statistics

CI: Confidence Interval

LAC: Legal Assistance Centre

MoHSS: Minister of Health and Social Services

NDHS: Namibian Demographic and Health Survey

RC: Reference Category

TFR: Total Fertility Rate

WHO: World Health Organisation

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ABSTRACT

Context: Generally, marriage has been early and almost universal phenomenon in Sub-Saharan Africa, and this can be seen as an important factor in determining fertility. However, fertility among never-married women is no longer negligible. Non-marital childbearing has increased, as women spend much of their reproductive lives unmarried, while remaining sexually active. Although a number of studies have examined non-marital childbearing, the exploration has been largely on teenagers and adolescent youths. The purpose of this study is to identify the factors predisposing never-married women aged 25−49 to have children.

Methodology: This study was a secondary data analysis of the 2006-07 Namibian Demographic and Health Survey data. The study population was never-married women, aged 25−49, with a total weighted sample of 2,121. The dependent variable was never-married fertility, categorised into women who have had no birth and those who have had at least one birth. Age specific fertility rates were calculated using the TFR2 module. Bivariate and multivariate binomial logistic techniques were used to examine the association between independent variables of interest and never-married women's childbearing experience.

Results: The study showed that 79% of never-married women, aged 25−49, had at least one child. Respondents from poor households, less educated respondents, rural dwellers and women from the Herero ethno-linguistic group, were more likely to be never-married mothers. The odds of being a never-married mother increased with age. The results further showed that the likelihood for being a never-married mother was higher among those women who reported ever having used contraception. Furthermore, the results showed that delaying age at sexual debut decreases the probability of being a never-married mother.

Conclusion: Childbearing among never-married women is common in Namibia, and with increasing age, the risk of having children outside of marriage increases. The consequences of never-married women's childbearing should be studied, with a focus on the factors identified to influence their childbearing. Furthermore, policies and programmes addressing never-married women's fertility should reflect the factors associated with never-married women's fertility in a context where marriage levels are decreasing and fertility is happening outside of marriage.

Keywords: never-married women; never-married; fertility; Namibia

CHAPTER 1:

INTRODUCTION AND BACKGROUND

1.0 Introduction

Fertility transition, defined as the shift from high fertility to low fertility, is underway in Sub-Saharan Africa, where Namibia is no exception (Bongaarts, 2010; Garenne and Zwang, 2006; MoHSS Namibia and Macro International Inc, 2008; Udjo, 2002). As might be expected, the rate of the fertility transition varies in the region. Data from the Demographic and Health Surveys (DHS) conducted between the 1990s and the 2000s reported that the total fertility rate was 2.9 in South Africa; 3.6 in Namibia; 3.8 in Zimbabwe; 4.0 in Ghana; 4.6 in Kenya and 5.0 in Cameroon (Shapiro et al., 2010). It is noteworthy too that the rate of the fertility decline has been faster in the Southern African region. However, fertility in Sub-Saharan Africa is still high in comparison to the situation in developed countries, where fertility has reached below replacement fertility level (Indongo and Pazvakawambwa, 2012). Additionally, the decreasing fertility levels occur in contexts where marriage patterns are changing, and it is now unclear whether marriage is still important for childbearing (Udjo, 2002).

In Sub-Saharan Africa, premarital fertility, defined as fertility before marriage, increased from 3.8% in 1950 to 5.7% in 2000 (Garenne, 2008). The small increase in the proportion of births to never-married women masked substantial differentials, as Southern African countries such as Namibia and Botswana experienced a 44% and 43% increase, respectively (Garenne, 2008). Mbanefo (2013) in a report on selected Southern African countries found that almost half of all births (41%) were born to single mothers in Swaziland compared to 20% in Zimbabwe and 25% in Lesotho. Out of these births, never-married motherhood accounted for 75%, 44% and 24% of all single mother births in Swaziland, Lesotho and Zimbabwe, respectively (Mbanefo, 2013).

Generally, marriage has been universal in Sub-Saharan Africa; operating as an important factor in determining fertility of populations with sexual relations taking place in the marriage context (Calves, 1999). Conversely, Bongaarts et al. (1984) suggest that fertility among unmarried women is no longer negligible in Sub-Saharan Africa. In addition, Bledsoe (1990) reported that

the institute of marriage has experienced dramatic transformations with declining rates of marriage and increased age at first marriage, leading to a significant increase in the number of unmarried women. The increases in age at first marriage and proportion of never-married women have been higher in Southern and East Africa than in West African countries (Westoff, 2003). These differentials are reflected in the low percentage of children living with single mothers, reported in West African countries, with Nigeria at a rate of 10.1%, followed by Uganda 16.9 percent. Higher proportions were reported in Southern African countries such as South Africa (34.4%) and Namibia (27.3%) (Mbanefo, 2013). The low rates observed in West Africa are associated with higher marriage rates and continued childbearing at young ages, while in Southern Africa, increased age at first marriage, declining marriage rates, as well as premarital sexuality and fertility, explain the higher proportion of children living in single-mother families (Mbanefo, 2013).

Overall fertility levels have declined to very low levels in developed countries, but childbearing among never-married women continues to be high (Musick, 2002; Upchurch et al., 2002). The determinants of never-married women's fertility have been explored extensively in developed countries, especially in the United States, where one in every three births occurs outside of marriage, and childbearing among never-married women is increasingly becoming more socially acceptable (Musick, 2002). The high proportions of births among never-married women in developed countries were brought about by a decline in marriage rates, marital instability, premarital sexuality, and the existence of financial support systems (Musick, 2002). Other contributing factors are the increasing tolerance of non-marital childbearing, and the increased risk of fertility outside of marriage, as women spend much of their reproductive years outside marital unions (Driscoll et al., 1999; Musick, 2002; Pinnelli et al., 2001; Rosenzweig, 1999; Upchurch et al., 2002).

Although increases in non-marital fertility have been noted in Southern Africa, research on never-married women's fertility has been sparse (Harwood-Lejeune, 2000). This notwithstanding, the fertility of these women has significant demographic and social implications for the future of Southern Africa and Sub-Saharan Africa as a whole. One demographic implication is never-married women's childbearing contributes to rapid population growth, which in turn, leads to a continued young age structure; thus overburdening the government with education, employment and health needs (Oyefara, 2009). Never-married women's fertility rates

have increased substantially, both in absolute numbers and in the proportion of all births (Upchurch et al., 2002). Despite the limited research on never-married women's childbearing in Sub-Saharan Africa, research showing increases in premarital sexuality, adolescent motherhood, extramarital fertility, and high marital instability, all suggest that it is relatively high, particularly in Southern Africa (Clark and Cotton, 2011; Harwood-Lejeune, 2000). Explanations for these changes have linked never-married women's fertility to social, economic, and political contexts, which influence family formation behaviours. Factors such as increases in age at marriage, education, labour migration of men and urbanisation point, to decreases in traditional means of controlling marriage and sexual relations (Bigombe and Khadiagala, 2003; Calves, 2000). Today, the role of marriage in the risk of childbearing is declining, with women now having children outside of wedlock, and bearing the sole responsibility of taking care of their children (Bigombe and Khadiagala, 2003). As a consequence, the aim of this study is to examine the factors that predispose never-married women to have children in Namibia, as there is a need for a better understanding of the factors that determine their fertility, where in Southern Africa more generally, the proportion of never-married women is currently on the rise.

2.0 Background Information on the study area

The Republic of Namibia is located in the South Western part of the African continent, with a surface area of 824 295 $km^{2,}$ and a population of approximately two million people. It shares borders with Angola, Botswana, South Africa, Zambia, and Zimbabwe (MoHSS Namibia and Macro International Inc, 2008). Namibia attained its independence on 21 March, 1990 after over 100 years of colonialism. The country now operates under a democratic system and is one of the wealthiest countries in Africa, owing to its possession of rich mineral deposits and a strong fishing sector. The economy of Namibia is dependent on the export of a few primary commodities, namely diamonds, uranium, copper, lead and mercury and livestock, as well as its Persian lamb pelt industry. The balance of the economy is made up by the fishing sector, manufactured products, and the tourism industry (MoHSS Namibia and Macro International Inc, 2003).

Despite its small population, Namibia is comprised of a multiplicity of ethnic groups comprising the Oshiwambo, Herero, Nama, Damara, Afrikaans, Kavongo, San, Tswana, Subbia, whites and

coloureds. These subgroups live in separate regions and localities. This is because, inherent in Namibia, is the past colonial system's reinforcement of ethnic divisions, which remain largely prevalent even after the formal demise of the system. A majority of the black African population is concentrated in the rural areas (MoHSS Namibia and Macro International Inc, 2003). There are two basic types of marriage in Namibia, namely civil marriages and customary marriages. A civil marriage is a marriage formalised by a state recognised officer in terms of the marriage act number 25 of 1961. A customary marriage is a union based on customs and traditions of the couple's community (Legal Assistance Centre, 2000). Although information on marriage is sparse, and partial, Garenne and Zwang (2006) argue that historically, Namibia has been characterised by differentials in the marriage rules across ethnic groups. For the Oshiwambo, and Herero ethnic groups, marriage required payment of bride wealth. The Nama practiced gift exchanges between the two families, and sexual relations before marriage were allowed. However, one had to be married if becoming pregnant. The Tswana have traditionally prohibited sex before marriage (Garenne and Zwang, 2006).

Notwithstanding the ethnic variations in general, in traditional Namibia childbearing before marriage was not allowed. Women were required to get married as soon as they began menarche, and had undergone initiation rituals. The economic changes brought about by colonialism – in particular migrant labour and cash cropping – led to changes in social relations, with women becoming more dependent on the wage labour procured mainly by men (Garenne and Zwang, 2006). This dependence led to instabilities in marriage, especially in situations where men could not support the women financially. Moreover, the traditional types of family formation were deteriorated by urbanisation and western education (Calves, 1999). Childbearing in Namibia is no longer restricted to marriage, and over half of the women between the reproductive ages of 15-49 have never been married. Nowadays, an increasing number of men and women postpone their age at first marriage, but they do not wait for marriage to be involved in sexual activities. This has resulted in increases in childbearing outside of marriage (MoHSS Namibia and Macro International Inc, 2003).

1.1 Problem statement

The average number of children per Namibian woman declined from 5.4 in 1992, to 4.6 in 2000, and further declined to 3.2 in 2006−2007 (MoHSS Namibia and Macro International Inc, 2008). These national level fertility rates mask disparities in fertility levels, as fertility in Namibia varies according to demographic and socioeconomic characteristics. For instance, in the period between 2006 and 2007, poor women had twice as many children when compared to their wealthy counterparts (MoHSS Namibia and Macro International Inc, 2008). The 2001 Census reported a national total fertility rate of 3.3 for never-married women, with urban and rural areas reporting 3.1 and 3.6 children per woman, respectively (CBS, 2003).

Despite fertility in Namibia declining, where it is one of the lowest in Sub-Saharan Africa, childbearing among never-married women is increasing. The increase is given impetus by the high age at first marriage in Namibia, with many women having their first marriage around their 28^{th} birthday, coupled with an increasing proportion of women who never marry (MoHSS Namibia and Macro International Inc, 2008). A higher age at marriage implies a long potential exposure to premarital sexual activity, and a high likelihood of partner change. Therefore, it does not only increase the possibility of being a never-married mother, but it also facilitates the spread of the HIV pandemic. Consequently, this probably contributes to the high HIV prevalence rate in the Southern African region, which is characterised by high ages at marriage: from 28.9 years in Namibia, followed by 26.7 years in South Africa, 25.8 years in Swaziland and 25.7 years in Botswana (Bongaarts, 2007). In Namibia, across marital groups, never-married women are more likely to have casual partnerships' and engage in risky sexual behaviours, thus facilitating the spread of the HIV pandemic (MoHSS Namibia and Macro International Inc, 2008).

Three Demographic and Health Surveys (DHS) have been conducted in Namibia, and in all surveys, the proportion of never-married women increased from 51.3% in 1992, to 54.3% in 2000 and 57.9% in 2006−2007 (MoHSS Namibia and Macro International Inc, 2008). The 1992 and 2000 Namibian Demographic and Health Surveys both reported that never-married women's fertility accounted for approximately 43% of all births and 60% of all first births (Garenne and Zwang, 2006). As such, marriage was found not to be significant in determining fertility. Indongo and Pazvakawambwa (2012) have argued that the increase in the proportion of never-

married women has led to an increase in the proportion of non-marital births. Both the number of men and their capacity to marry have decreased in Namibia. The 2001 sex ratio of 94 males per 100 females in Namibia decreased to 90 males per 100 females in 2006 (MoHSS Namibia and Macro International Inc, 2008). Reductions in marriageable men brought about by the increasing cost of bride wealth, as well as the decreases in men's employment and earning, affect marriage levels. In the past, in Sub-Saharan Africa bridewealth was paid in the form of cattle with the assistance of the family. Nowadays the payment has shifted to monetary bride wealth, and in some cases, it is the sole responsibility of the man who wants to marry. However, high unemployment rates and adverse economic conditions impinge on men's ability to pay the bride wealth (Posel and Casale, 2013).

It is imperative to understand that most children of never-married women do not have access to their fathers' resources (Calves, 1999; Gustafsson and Worku, 2006). According to the 2006−2007 Namibian Demographic and Health Survey (NDHS) only 5% of children below the age of 18 lived with only their fathers, while 33% lived with only their mothers. Only 26% lived with both parents, and 34% lived with neither parent (MoHSS and Macro International Inc, 2008). Never-married women's childbearing has been defined as a societal problem in Africa, as men fail to both recognise their children as well as assume their parental roles (Calves, 2000). Although childbearing among never-married women is not synonymous with low socioeconomic status, single mothers face higher levels of poverty, and it is more common AMONGST economically disadvantaged groups (Clark et al., 2012; Driscoll et al., 1999; Goro, 2007; Harwood-Lejeune, 2000). Goro (2007) used data from 1993, 1998, and 2003 DHS surveys in Ghana to examine the determinants of child mortality in three regions of Northern Ghana using multivariate logistic regression model. The main finding of the study was that children born to married women had lower levels of mortality relative to children born to never-married women. In line with the aforementioned study, Harwood-Lejeune (2001), examining premarital childbearing in Sub-Saharan Africa, points out that in the region, never-married mothers have high levels of poverty, and their children face higher levels of mortality, while in some cases, the women abandon their children. Consequently, never-married women's fertility poses a myriad challenges for the quest to improve the wellbeing of women and children.

It is also documented that most childbirth amongst never-married women is either unwanted or unplanned, and it is noted that this is a major health and social issue in Southern Africa (Lwelamira et al., 2012). For example, never-married Namibian women report high levels of mistimed and unwanted pregnancies, with these levels increasing (MoHSS Namibia and Macro International Inc, 2008; Johnson et al., 2011). In 1992, 59.7% of never married women reported that their first birth was unwanted, compared to 20.4% of marital first births in Namibia (Garenne, 2006). This suggests that never-married women may have an unmet need for family planning, since they may fail to access or they do not use services, and if they do, they may be inconsistent (Swartz, 2002; Moultrie, 2002; Musick, 2002). Unlike developed Western countries, most countries in Sub-Saharan Africa lack welfare and social policies to protect never-married women and their children from poverty and poor health outcomes (Clark and Hamplova, 2011). This situation is attenuated by the fact that the women disproportionately bear the social burdens of having non-marital births, as they generally retain physical custody of children (Guzzo and Hayford, 2010). In addition, the problem of non-marital childbearing is likely to be a cycle, with children of never-married women being more likely to fall into the same trajectory (Mbanefo, 2013).

There is a growing concern over women conceiving outside of marriage, due to the tendency for this to result into single mother and female headed households. Available evidence points to the increasing feminisation of poverty, as female headed households account for 40% of all households in Namibia, with a per capita income of N$7 528 in contrast to N$12 248 per capita income for male-headed households (Freeman, 2010). Single mother and female-headed households have increased in Namibia (Freeman, 2010). However, this increase happens against a backdrop of increases in women's educational attainment, labour force participation, weakening traditional family structures, and opportunities and lifestyles associated with urban residence, and women rationally choosing not to marry, but continuing to have children (World Bank, 2011). Accordingly, this suggests that never-married women may be able to support themselves and their children. In contrast, never-married women's fertility remains poorly researched in Southern Africa, where it is reported to be on the rise. As such, the identification of the factors predisposing never-married women to have children in Namibia will add to the much needed information.

1.2 Research question

What factors predispose never-married women to have children in Namibia?

1.3 Research objectives

1.3.1 General objective

- To examine the factors predisposing never-married women to have children in Namibia.

1.3.2 Specific objectives

1. To examine the pattern of childbearing among never-married women.
2. To compare the fertility pattern of never-married women, married women and the general fertility pattern in the country.
3. To identify the factors predisposing never-married women to have children.

1.4 Justification

This study is timely, as studies on never-married women's childbearing are sparse in Southern Africa. More studies have been done on non-marital fertility among adolescents, which is usually unwanted and unintended. These studies do not provide a holistic picture, as older never-married women in other reproductive age groups may also have children outside of marriage (Garenne and Zwang, 2006). In a study on premarital childbearing in Namibia, Gage (1998) reported that at the time of pregnancy, a third of conceptions were wanted, a fifth were mistimed, and 12% were not wanted at all. The same study contended that older women had a decreased risk of having either a mistimed or unwanted pregnancy. In America, the federal government recognised the significance of implications of never-married women's childbearing, and concluded that initiatives to address it that may be appropriate for teenagers and adolescent youths, may not be appropriate for older, unmarried women (Fears, 2008).

Driscoll et al. (1999) examined the correlates of non-marital fertility among adult women in their twenties, and concluded that although three-quarters of births among teenagers occured outside of marriage, they accounted for only 30% of all births that are non-marital. An increasing proportion of women who have non-marital births are above the age of twenty (Driscoll et al., 1999). In a study on single motherhood in Southern Africa, Mbanefo (2013) suggests that the welfare of children born out of wedlock depends on the characteristics of their mothers. The

study contends that older women fare better, and are more able to support their children than younger women are. It is important to examine fertility among the older women based on their characteristics and composition. This examination is indispensable in advancing understanding of their fertility, as their characteristics may be different, and may be more or less likely to enable them to support themselves and their children, or lead to the further feminisation of poverty.

Evidence of fertility declines in Southern Africa exist, however cultural rather than just economic value of children still exists. With reference to never-married women's fertility, children remain highly valued, such that marriage in some contexts becomes irrelevant to childbearing (Potts and Marks, 2001). An increasing body of research argues that never-married women's fertility increases single motherhood (Chimere-Dan, 2003). In order to devise effective policies and programmes to address never-married women's fertility, knowledge of the factors responsible for their fertility is important. Consequently, there is a need to conduct research that situates never-married women's fertility in its socioeconomic and cultural context, so as to improve the understanding of factors that affect their fertility in Namibia and other similar settings.

The Namibian government has been concerned that although fertility declines have been noted, fertility still surpasses the country's economic growth rate. However, there have been limited in-depth studies investigating fertility in Namibia (Indongo and Pazvakawambwa, 2012). This is an issue of concern, as fertility has implications on the population's growth rate, as well as the socioeconomic, political and cultural wellbeing of a society. Never-married women's rising fertility is one of the factors that have a bearing on Namibia's fertility levels (Indongo and Pazvakawambwa, 2012). This study will add knowledge to the factors that predispose never-married women to having children, as well as the magnitude of their impact. The design and implementation of fertility policies will greatly benefit from the identification of these factors' effect on never-married women's fertility, hence adding to Namibia's quest to fight poverty, as well as achieving substantial health and wellbeing of women and children.

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1.5 Organisation of the dissertation

Chapter Two provides an overview of the literature and theories on never-married fertility. This chapter reflects critically on the ways that other researchers have examined never-married fertility in Namibia, Southern Africa and elsewhere. The conceptual framework which consists of the identification and explanation of the key independent variables predisposing never-married women to having children also forms part of this chapter. Chapter Three is the methodology section, which is a discussion addressing the conceptual and practical steps taken to in order to carry out this research. It has subsections that present the source of data, data collection process, sample size determination, study variables, and methods of analysis.

The last part of the paper comprises of the findings (Chapter Four), as well as the discussion and conclusion (Chapter Five). Chapter Four presents the findings of the analysis and interpretation, while Chapter Five provides a link to the previous sections, by relating the findings of the analysis to the literature and conceptual framework, and from these results, the answer to the research question is deduced. Furthermore, Chapter Five provides the conclusion, as well as suitable recommendations. This study ends with implications for further research.

CHAPTER 2:

LITERATURE REVIEW

3.0 Introduction to the chapter

This chapter starts with a review of literature on the factors predisposing never-married women to have children. These factors have been categorised into demographic, socioeconomic and behavioural factors. Secondly, theories and the conceptual framework underlying this study are also discussed and linked.

3.1 Introduction

In developed countries, non-marital fertility has been on the rise since the 1960s. While in Europe it is increasingly being accepted as an alternative form of family formation, in America its growth has been greatly discouraged (Benson, 2009). The argument behind discouraging unmarried parenthood is that it has been associated with negative health and educational outcomes for children, as well as family instability. In Europe, most non-marital fertility happens in cohabiting relations that are stable and long lasting, resembling in some cases marital unions. However, in the United States, cohabiting relationships are not as stable, where most non-marital childbearing happens amongst single women (Benson, 2009).

In the US, there has been a growing concern over the increasing childbearing among never-married women and the consequences that it poses for the women themselves, their children and the society as a whole. Bolte and Scharte (2012), in a study conducted in the United States, found that a third of single women lived below the poverty line, and that children of unmarried women had an increased risk of poor health outcomes when compared to children of married women. Children who do not reside with both parents have poor chances of survival, lower educational achievement, and psychological wellbeing. These children are more likely to also have non-marital births, and to experience increased poverty as adults (Fears, 2008). Musick (2002) suggests that although prior research on non-marital fertility has tended to focus more on adolescents, non-marital fertility is now more prominent amongst older women, with his study reporting that over two thirds of non-marital births occur to women aged 20 and above.

According to Musick (2002) in America, the odds of being a never-married mother increase by a factor of 2.4 for black women, when compared to white women. Additionally, higher educational attainment reduces the odds of being a never-married mother by 30%; however, this varies by race, with white women and black women experiencing a 75% and 50% reduction, respectively. Musick (2002) concludes that black women in America generally have higher rates of childbearing outside of marriage due to lower marriage prospects, decreases in stigma attached to being a never-married mother, and strong intergenerational ties that assist with childcare activities. Never-married women's childbearing is a social issue that does not only affect the never-married mothers but has far reaching consequences for the society, with negative consequences ranging from children living in financially unstable conditions, to the burden placed on the government, that provides never-married mothers with welfare (Gibson-Davis, 2011).

3.2 Never-married women's childbearing in Southern Africa

In an analysis of age, at first marriage in Sub-Saharan Africa, Garenne (2004) found low levels of median age at first marriage ranging from 16-18 years in most countries, as such, coinciding with the long-established trend of universal marriage and low age at first marriage. The same study found higher median ages at first marriage, averaging 24 in Southern African countries, namely South Africa, Botswana and Namibia. Increases in female education, economic instability and social changes in partnerships were the factors found to be responsible for the increases in age at first marriage (Garenne, 2004). In Sub-Saharan Africa, adverse economic circumstances have led to reductions in marriage affordability, while the expansion of women's education has led to delays in marriage, whilst remaining sexually active (Jah et al., 2009). Guzzo and Furstenberg (2007) argue that the onset of sexual activity, first birth and first marriage is changing in Sub-Saharan Africa. These changes are evidenced by the rise in the median age at first marriage; while on the other hand, there is an onset of sexual activities and childbearing before marriage. South Africa, for example, reported a total never-married fertility rate of 3.4 children per woman in 1994 (Chimere-Dan, 2003). In the 1991 Botswana census, 60% of women in the reproductive ages had children, even though they had never been married (Gaisie, 2000). Marriage in Botswana has been replaced by single parent households, which now represent 70% of households in Botswana, out of which 90% are female-headed households. Gaisie (2000) contends that these households have lower incomes and represent the poorest categories in Botswana.

Southern Africa has experienced a decline in marriage rates, however childbearing is still highly valued and constitutes an important aspect of the status of women (Chimere-Dan, 2003; Potts and Marks, 2001). The increase in childbearing outside of marriage is largely a function of social changes in norms pertaining to family and gender roles (Indongo and Pazvakawambwa, 2012). For example, in Namibia, the colonial political system was one of the factors that led to the decline of marriage, as men had to leave their wives in rural areas to go work in urban areas. The colonial laws did not permit wives to join their husbands in urban areas, and as such, women stayed for long periods without their husbands. This led to women assuming the role of head of the household, and in some cases, to reject the importance of marriage in childbearing (Chimere-Dan, 2003). This then suggests that childbearing outside of marriage may be a rational survival strategy, as marriageable men are decreasing, however it does not come without consequences. Never-married women's fertility is in most cases lower than that of married women, but they have an increased exposure to poverty, due to lack of economic support from husbands (Cancian and Reed, 2009).

3.3 Determinants of never-married women's fertility behaviour

In a study on the determinants of fertility in Namibia factors such as women's age, place of residence, educational attainment, employment and contraceptive use, were found to be significant predictors of fertility (Indongo and Pazvakawambwa, 2012).

3.3.1 Demographic factors

According to Jah et al. (2009), the risk of having a non-marital birth varies by variations in the probability of being exposed to changing cultural norms. Women residing in urban areas are more likely to be exposed to social changes that impact on marriage when compared to women in rural areas. Such changes include increasing women's education and employment, all of which decrease women's chances of being married early. The risk of having a birth is higher for never-married women in urban areas (Jah et al., 2009). Calves (2000) underscores the role of the declining familial and social control of sexual relations in increasing exposure to premarital sexuality among never-married women in urban areas. In contrast, Lindstrom et al. (2008) notes that although the risk of having a birth is higher in urban areas, the opportunity costs of time are higher in urban areas, as the women experience problems in arranging child care and maintaining employment. As a consequence, never-married women in urban areas are likely to use modern contraception methods, resulting in a lower probability of having a birth than that amongst

women from rural areas. This is linked to rural women's low educational and employment prospects (Bbaale, 2011).

In demographic analysis, current age is one of the main variables that have an impact on vital events such as fertility, marriage, divorce and mortality (Palamuleni, 2011). Mbanefo (2013) reports that in Swaziland childbearing outside of marriage increased from 33% in 1986 to 47% in 2006. This increase was explained by the fact that, by the age of 30, over two-thirds of women of childbearing years had not married, yet they were sexually active and had low levels of contraceptive use. Makatjane (2002), in a study in Lesotho, found that never-married women aged 35−49 were more likely to have experienced premarital sexual relations than younger never-married women of between 15−24 years of age. This was due to their longer number of years since mernache thus exposing them to a higher risk of premarital sexual relations. The older the woman, the higher the probability of being a never-married mother, due to the longer length of exposure to premarital sex (Subaiya and Johnson, 2008). Mbanefo (2013), using the 2010-2011 Zimbabwe Demographic and Health Survey and the 2009 Lesotho Demographic and Health Survey, found increased odds of single motherhood, with increases in the age of woman. Women aged 45 and above were approximately five times and two times more likely to be single mothers, respectively. Another demographic factor argued to be instrumental in determining whether a never-married mother will have a birth or not is number of household members. Non-marital fertility may increase among respondents from households, with more members, as there is a higher chance that other members will assist with childcare activities, as well as provide financial assistance to the unwed mothers (Madhavan and Thomas, 2005).

3.3.2 Socioeconomic factors

Educational attainment is instrumental in determining the economic position of never-married women, as it is associated with better paying job opportunities, as well as an increased understanding and ability to deal with needs of children (Augustine, 2009). Educated women may choose not to marry, since they can afford to take care of their children, and because they want to have control over their lives (Meekers and Calves, 1997). Nonetheless, Guzzo and Furstenberg (2007) contend that factors such as high educational attainment and occupational aspirations often act as protective factors against never-married fertility. Similarly, several

studies document a negative relationship between education and having children outside of marriage (Musick, 2001; Potts and Marks, 2001; Upchurch et al., 2002). For example a study in the US, high school educational level was found to have a 32% reduction in the odds of childbearing outside of marriage, as compared to women with no education (Musick, 2001). The low fertility among educated never-married women was associated with a lower risk of early childbearing, due to delays brought about by schooling, and increased contraceptive knowledge as well as use (Musick, 2001; Potts and Marks, 2001).

Guzzo and Furstenberg (2007) posit that a number of factors such as low socioeconomic status, low educational attainment and occupational aspirations increase the likelihood of having a non-marital first birth. The same factors also increase the chances of having subsequent non-marital births. Nonetheless, it is important to understand that fertility among never-married women is not only confined to women with a low level of education, but is also prevalent amongst women with higher education, who might also have children even though they have not married. Therefore some women and their children are not subject to inevitable poverty (Sibanda and Zuberi, 1999). A qualitative study by Kaufman et al. (2001) examining the experiences of adolescent and adult women in South Africa, finding that educated never-married mothers had a higher chance of being productively employed. This facilitates their ability to fend for themselves, and their children, and also reduces the negative effect of the absence of fathers. The above-mentioned study also reports that in South Africa as well as in other Southern African countries, where marriage is declining, never-married women who are educated and productively employed find marriage irrelevant to childbearing and financial security. The study argues that as women's education has increased, the stereotype of men as more economically productive no longer holds. More educated women delay marriage, and marry less often, making them more at risk of being never-married mothers, since they spend a significant amount of their childbearing years unmarried, even though they may be sexually active. However, they are characterised by more access and effective use of contraception; with more autonomy; and have higher levels of labour force participation (Bbaale, 2011; Bongaarts, 2010).

Increases in fertility among never-married women have come at a point when education and employment among women are on the rise. Declines in marriage coincide with increased women's labour force participation, regardless of their marital or parental status. Women's labour force participation and access to higher educational attainment may enable them to

support their children (Gonzalez, 2005). Indongo and Pazvakawambwa (2012) argue that in developing countries, women now delay childbearing to increase their income opportunities, so as to reduce likelihood of unemployment. However, Gonzalez (2005), examining the determinants of single motherhood, found that never-married mothers were more prevalent in contexts characterised by low marriage prospects, income and employment opportunities. If economic opportunities are non-existent, then the ability of never-married mothers to support their children on their own is curtailed (Gonzalez, 2005).

Colonisation in some parts of Sub-Saharan African countries brought about cultural changes that led to the adoption of Western Christianity. Christianity prohibited childbearing among never-married women, and promoted marriage (Garenne and Zwang, 2006). In a study examining the likelihood that religious participation increases marriage prospects for single mothers in the US, religious affiliation had a negative correlation with the likelihood of having children outside of marriage, and was positively associated with marriage to the biological father of a non-marital birth (Davis and Threlfall, 2011). On the contrary, a study in Kenya found religion to be a significant factor contributing to never-married women's fertility, with Protestants displaying increased odds of never-married fertility, as compared to Catholics (Musau, 2012). According to Essien and Bassey (2012) never-married mothers may be discriminated against in their churches, and at times they are rejected outright, due to the dominant view that they are prone to deviant behaviour. Thus, religion can act as a factor in reducing the probability of being a never-married mother.

On the other hand, it has been argued that the role of religion on never-married fertility may not be as influential as other sociocultural factors. Religion in Southern Africa was greatly affected by colonisation; with the colonisers introducing Christianity. The end result of this introduction was that a majority of people in Southern Africa now "claim" to be Christians (Hallencreutz and Palmberg, 1991). What about the traditional beliefs and diverse rituals by ethnic denomination? According to Yeatman and Trinitapoli (2008), some African Christians believe in ancestors, consult traditional healers and perform traditional rituals. Fertility differentials may not show by religion, because Demographic and Health Survey data give the Christian denominations in broad, imprecise categories, such as Catholic and Protestant. On the contrary, using Protestants as a classification category obscures differentials, because there are different types of Protestantism, for example old forms like Anglican and Presbyterian, as well as new forms like

Pentecostal and African Independent Churches; these are distinct religious groups with different belief systems (Yeatman and Trinitapoli, 2008).

Mbanefo (2013) did not find any association between religion and single motherhood in Southern African countries namely Lesotho, Swaziland and Zimbabwe. Garenne and Zwang (2006) in a study on premarital fertility and ethnicity in Sub-Saharan Africa, found that 57% of the variation in premarital fertility was explained by socioeconomic correlates, while the rest was due to ethnicity. The conclusion from the same study was that sociocultural factors, such as ethnicity, have often been neglected in demographic literature due to their complex nature; however ethnicity has a marked effect on never-married women's fertility. Some ethnic groups are permissive, while others are restrictive, to never-married women's engagement in sexual activities, and this leads to differences in the levels of childbearing among never-married women (Garenne and Zwang, 2006). The aforementioned study found West African countries to have the lowest levels of childbearing among never-married women, due their repressive attitude and low ages at marriage. Southern African countries had the highest levels, due to a high number of permissive ethnic groups, and high ages at marriage. The Herero, an ethnic group in Namibia, was found to be the most permissive of all ethnic groups in Sub-Saharan Africa, with over 76% of women being never-married mothers (Garenne and Zwang, 2006).

In their follow up study on the effect of ethnicity on premarital fertility, Garenne and Zwang (2009) surmised that in Sub-Saharan Africa, levels of tolerance of premarital fertility and sexuality are highly influenced by ethnicity. The study found that sociocultural factors such as religion and ethnicity explained 50% of premarital fertility, while socioeconomic factors (place of residence, highest level of education and household wealth) accounted for the other half. An ethnographic atlas by Murdock (1967) found behaviours such as fertility, sexual relations and nuptiality to be sensitive to socio-cultural factors in particular ethnicity. According to Murdock (1967), some ethnic groups are repressive, while others are more tolerant of sexual relations before marriage. Murdock (1967) categorised attitudes towards premarital fertility into five groupings, namely: (V) repressive, strong sanctions; (E) early marriage' low premarital sexual behaviour; (P) restrictive, weak sanctions; (A) premarital sexual behaviour acceptance unless it results into pregnancy; and (F) relations accepted with no penalties. Garenne and Zwang (2009) argue that this categorisation is still applicable to the understanding of premarital fertility. Garenne and Zwang (2009) found high premarital fertility in Southern African countries

(Namibia, Swaziland and South Africa); and they also found ethnic differentials in levels based on permissiveness of ethnic group to premarital sexuality and fertility. The high pocket of fertility outside of marriage in Southern Africa can be attributed to disruptions in family formation and values, brought about by labour migration associated with the mining industry (Garenne and Zwang, 2009).

In Cameroon, ethnic variations were found in permissiveness to premarital sexual relations and fertility. The Peul ethnic group, classified as traditional, rural and pronatalistic, had lower rates of premarital sexual relations due to early marriage and the valuing of virgin marriages. However, the Yaoundé ethnic group, classified as more urbanised and having weakened cultural values, had higher rates of premarital sexuality and fertility, resulting in the stigmatisation of girls that keep their virginity (Meekers and Calves, 1997). Similarly, in Tanzania, men enticed women with the hope of marriage, if the women proved their ability to bear children. Although women could use pregnancy to accelerate marriage, in most cases, the marriage pledge was not fulfilled (Ngalinda, 1999).

3.3.3 Behavioural factors

In Southern Africa, while women may delay marriage or marry less often, their age at first sexual debut is still early. As such, an increase in non-marital fertility is coupled with this trend (Zaba et al., 2004). In South Africa, one important characteristic of age at first sex is that, unlike the case as it is in most developing countries, this occurs outside of marriage. Age at first sexual intercourse is an important indicator of premarital fertility, as it marks the beginning of exposure to pregnancy; and its importance is higher than age at first marriage in Southern African countries like Namibia, which have high median ages at first marriage, and low ages at first sexual activity (Zaba et al., 2004). Research suggests that early initiation of sexual relations increases the risk of experiencing non-marital fertility (Mensch et al., 2005; Zaba et al., 2004). Mensch et al. (2005) posits that this link is due to low and ineffective contraceptive use at young ages. In addition, early age at first sexual intercourse is not only associated with a greater risk of non-marital fertility, but the pregnancies also happen to be unwanted, and it is also a factor associated with HIV infection, as well as multiple partnerships (Zaba et al., 2004).

The lifetime number of sexual partners is a potential factor that could predispose never-married women to having children. Meekers and Calves (1997) examined marriage prospects in Sub-

Saharan Africa, and found that never-married women have a higher propensity for having a high number of lifetime partners. This increases their probability of being never-married mothers, because in most cases, their partners want them to prove their fertility before they can wed (Meekers and Calves, 1997). In Namibia, women are required to prove their fertility before marriage. However, the marriage promise is not fulfilled after the birth of the child. When the women start new relationships, their new partners also expect them to bear children, only for them to be deserted again (LaFont and Hubbard, 2007). This is worrisome, as having children with different fathers complicates the family situation of children (Fears, 2008). Multiple partnered fertility increases the odds of negative emotional, cognitive and health outcomes for never-married mothers' children (Tinkew-Bronte et al., 2009). Moreover, the high number of children increases the financial responsibilities of never-married mothers, and reduces their chances of being gainfully employed, due to the increased burden associated with childcare (LaFont and Hubbard, 2007). In a study conducted in Cameroon by Subaiya and Johnson (2008), found a positive association between the number of lifetime sexual partners and time spent unmarried. This is because women with a higher number of lifetime partners have a higher propensity of having had non-marital births, thus marginalising them in the marriage 'market'.

What is derived from the literature review is that childbearing among never-married women is not restricted to developed countries. A growing proportion of educated career women are rationally choosing to be never-married mothers, albeit they may be able to support their children, by and large, never-married mothers are associated with higher risks of poverty, and poor health outcomes for themselves as well as their children. While most research that exists concerns developed countries, childbearing among never-married women is increasingly becoming an issue in Southern African countries like Namibia, and it is contributing to increases in single motherhood, and thus leading to government concerns over the increased feminisation of poverty. Much less is known about the characteristics of older, never-married mothers, with most research on never-married fertility being limited to teenage and adolescent childbearing.

3.4 Theoretical and conceptual framework

3.4.1 Becker's economic theory and the second demographic transition theory

There have been few attempts to develop a theory for the determinants and implications of non-marital fertility (Benson, 2009). This study draws from two theories, namely Becker's economic theory, and the second demographic transition theory, in order to explain the fertility behaviour

of never-married women. Becker's economic theory of marriage argues that people marry for the purpose of childbearing, and when the expected gains from marriage are high, where for example, women bear children, while men are involved in the labour market (Becker, 1974). For instance, historically, marriage has been universal in Sub-Saharan Africa, including in Namibia, with women marrying and beginning childbearing at young ages, while men fend for their families. From the theory's perspective it suffices that nowadays individuals' quest to achieve economic stability through education and labour force participation leads to delays in marriage. However, the high rates of adverse economic conditions in Sub-Saharan Africa have led to declines in the affordability and desirability of marriage (Jah et al., 2009). Becker hypothesised that fertility outside of marriage will increase with women's increased labour force participation, due to lower gains from marriage (Becker, 1974).

Lesthaeghe and Moors (2000) used the second demographic transition theory to account for the increases in fertility among unmarried women. The second demographic transition is characterised by declines in age at first sexual activity, declines and delays in marriage, and ideational shifts in values and attitudes associated with increases in individual autonomy, weakened family ties, rising female education and labour force participation, westernisation and modernisation (Benson, 2009; Lesthaeghe and Moors, 2000). For instance, in Sub-Saharan Africa, this situation comes about as payment of bride wealth, in the form of cattle shifts to monetary bride wealth. The men increasingly bear the sole cost of the monetary bride wealth, where beforehand, their families were the ones providing the cattle (Calves, 2007). This system ultimately fails, as men are not able to pay the bride wealth, in some cases leading to delays in marriage until economically stable, while in some instances, it has also resulted in decreases in marriage rates. The decreases in marriage lead to low marital fertility, on the one hand, while on the other, high fertility among never-married women as the connection between marriage and fertility decreases (Kaufman et al., 2001; Magagula, 2009). The connection between marriage and fertility behaviour seems to be dissipating, with increases in women's age at first marriage and proportion of never-married women. In the second demographic transition, national fertility rates decline, while never-married women's childbearing increases (Lesthaeghe and Moors, 2000).

3.4.2 Conceptual framework

Becker's economic theory and the second demographic transition theory both theorise never-married women's childbearing as a function of socioeconomic changes in society. These changes are evidenced by the early age at first sexual activity, changes in values and attitudes associated with increases in individual autonomy, weakened family ties, rising female education, labour force participation and modernisation (Benson, 2009; Lesthaeghe and Moors, 2000). As such, in order to understand never-married fertility, the social context that influences never-married women's family formation behaviour should be taken into consideration. Based on the above theories and the literature review, the conceptual framework employed in this study was adapted from the conceptual framework for analysing the proximate determinants of fertility in Sub-Saharan Africa, proposed by Bongaarts et al. (1984), as well as from ideas obtained from previous studies.

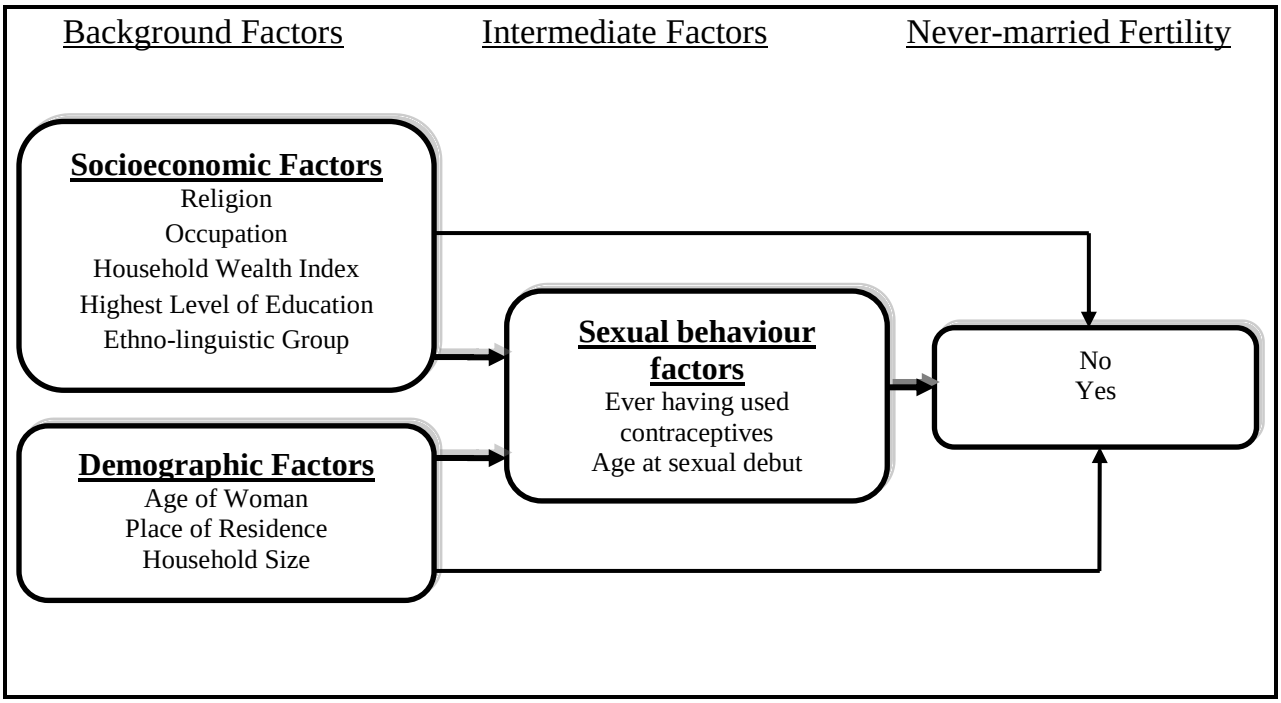

Figure 1: Conceptual framework for the study of the factors predisposing never-married women to have children (Benson, 2009; Bongaarts et al., 1984; Lesthaeghe and Moors, 2000)

According to Bongaarts et al. (1984), for a comprehensive and integrated approach to analysing fertility behaviour, a conceptual framework should specify that the socioeconomic and cultural factors (background factors) work through biological or behavioural processes (intermediate factors) to affect fertility behaviour (Bongaarts et al., 1984; Lesthaeghe and Moors, 2000). This

specification is important, as socioeconomic and cultural factors do not always affect fertility behaviour directly. On the other hand, the biological or behavioural factors through which socioeconomic and cultural factors operate have a direct impact on fertility behaviour (Bongaarts et al., 1984). Therefore, an analysis of fertility behaviour that specifies the intermediate (biological and behavioural) determinants provides a better and more conclusive understanding of the impact of the background (socioeconomic and cultural) determinants (Bongaarts et al., 1984).

As illustrated from the above conceptual framework (Figure 1), the exposure to the risk of childbearing among never-married women can be explained by pathways that begin with background factors' influence on intermediate factors, and end with the influence of these factors on never-married women's fertility. In this study, it is hypothesised that demographic and socioeconomic factors influence never-married women's childbearing, through selected sexual behaviour variables, namely ever using contraceptives, age at sexual debut, and number of lifetime partners. Generally, the theories employed in the present study, namely Becker's economic theory and the Second demographic transition, attempt to show how the decline in marriage and the resultant increase in non-marital fertility come about in Southern African countries. Key to the conceptual framework is the identification of the intermediate variables that can be influenced by changes in background variables, and have a direct effect on never-married women's fertility.

3.4.3 Hypotheses

Based on the literature reviewed, the hypotheses to be tested in this study are as follows:

1. Never-married women with less than secondary education are less likely to have had a birth than those with secondary or higher education.

2. Never-married women living in urban areas are more likely to have had a birth than never-married women living in rural areas.

NB: PLEASE READ CHAPTER 6 IN LIEU OF THE RESULTS (POSTSCRIPT)

3. The higher the number of lifetime partners the higher the probability of having had at least one child.

4. Never-married women who report ever using contraceptives are less likely to be never married mothers.

CHAPTER 3:

RESEARCH METHODOLOGY

3.0 Introduction to the chapter

The following section discusses the methodology covering the source of data; study sample, variables used as well as statistical methods for analysis.

3.1 Data source

This study was a secondary data analysis of the 2006−2007 Namibian Demographic and Health Survey (NDHS). The 2006−2007 Namibian Demographic and Health Survey (NDHS) utilised in this study was conducted by the Ministry of Health and Social Services, with the assistance of Macro International Inc. The NDHS is a cross-sectional, nationally representative population based survey with large sample sizes. The 2006−2007 NDHS used three questionnaires namely; the household questionnaire, the women's questionnaire, and the men's questionnaire (NSO, 2011). In order to meet the objectives of this study, only the women's questionnaire was used. The Women's Questionnaire collected demographic and socioeconomic information from all eligible women between 15−49 years of age. In this study, the questionnaire provided information on the proportion of never married women with no children, and those with at least one child. It also provided information on the demographic, socioeconomic as well as contraception and sexual behaviour characteristics of the respondents that were necessary to examine the factors predisposing never-married women to have children in Namibia.

3.2 Objectives and organisation of the 2006−2007 NDHS

DHS surveys provide data for a wide range of monitoring and impact evaluation indicators in the areas of health and population. The 2006−2007 NDHS is the third survey of its kind in Namibia following those conducted in the years 1992 and 2000. The primary objective of the 2006−2007 NDHS is to provide up-to-date information for policymakers, planners, researchers and programme managers (MoHSS Namibia and Macro INC, 2008). It aims to provide them with current information on marriage, fertility levels and trends, family planning, sexual behaviour, and maternal and child health amongst others. The financial assistance to carry out the

2006−2007 NDHS was rendered by the government of Namibia assisted by the Global Fund, the United States Agency for International Development (USAID), the SADC Department for International Development (DFID), the United Nations Children's Fund (UNICEF), the United Nations Population Fund (UNFPA) and the World Health Organization (WHO) (MoHSS Namibia and Macro INC, 2008).

3.3 Sample design

The 2006−2007 Namibian Demographic and Health Survey (NDHS) used a sampling frame adapted from the 2001 Housing and Population (HPC) census carried out by the Central Bureau of Statistics (CBS). The 2001 HPC was chosen from the stratification of Namibia's 13 regions with each region being sub-divided into its constituents, as well as into enumeration areas. After the census, some enumeration areas were combined with adjoining enumeration areas to counter for their smaller population sizes, while larger areas were split in such a manner as to form primary sampling units (PSUs) of uniform sizes (MoHSS Namibia and Macro INC, 2008). This resulted in a sampling frame made up 3750 PSUs. A representative sample of 10,000 households was selected for the NDHS to allow for an acceptable level of precision for the indicators measured in the survey. The 2006−2007 NDHS was selected from a two-stage sample design, because it is simple to implement, it reduces non sampling errors in selection process, and it does not allow for replacement of households, thereby reducing survey bias (MoHSS Namibia and Macro INC, 2008).

The PSUs were the first stage and households were the second stage sampling units. A complete listing of households which served as a sampling frame for the second stage of sampling was conducted from November 2006 to January 2007. An equal probability systematic sampling was then conducted, where a fixed a number of households was selected, totalling 500 PSUs. In each PSU, 40 households were systematically selected, and from these 20 households, we systematically selected for the NDHS.

3.4 Study population

The unit of analysis for the study was never-married Namibian women of reproductive age between 25−49 years of age. The study population was derived from the variables; current marital status (v502) and age of woman (v013). The original current marital status variable v502

in the NDHS dataset had three categories, namely never-married women; married women and formerly married women. Non-marital fertility can occur among never-married women and women who are divorced, or separated or widowed, who have not yet remarried. However, this study only focused on never-married women, due to data limitations as the Demographic and Health Survey (DHS) cannot classify whether the children born to divorced, separated or widowed women were born during marriage, or after divorce, or the death of a woman's husband, and also because these women are not a homogenous group. Therefore, the study population consists of women between 25−49 years of age.

3.5 Sample size

The women's individual recode dataset had **9,723** women aged 15-49, who were successfully interviewed and had no missing or incorrect information on the variables of interest. Since this study is only focused on never-married women, the sample size decreased to **5,514** with the exclusion of **3,536** married women, and **673** formerly-married women. Among the **5,514** never-married women, only those aged 25−49 were retained for analysis. As a consequence, the sample size for analysis further reduced to **2,077** with **380** (18.3%) never-married women reporting they had never had a live birth, while **1,697** (81.7%) reported having had at least one live birth in their lifetime. The weighting factor provided by MEASURE DHS was applied to the data so as to adjust for over and under-sampling of certain subsets of the population. The total weighted sample was **2,121** out of which **439** (21% had never had a live birth) and **1,682** (79%) have had at least one live birth. The eventual analysis sample from the number interviewed is presented in Figure 2.

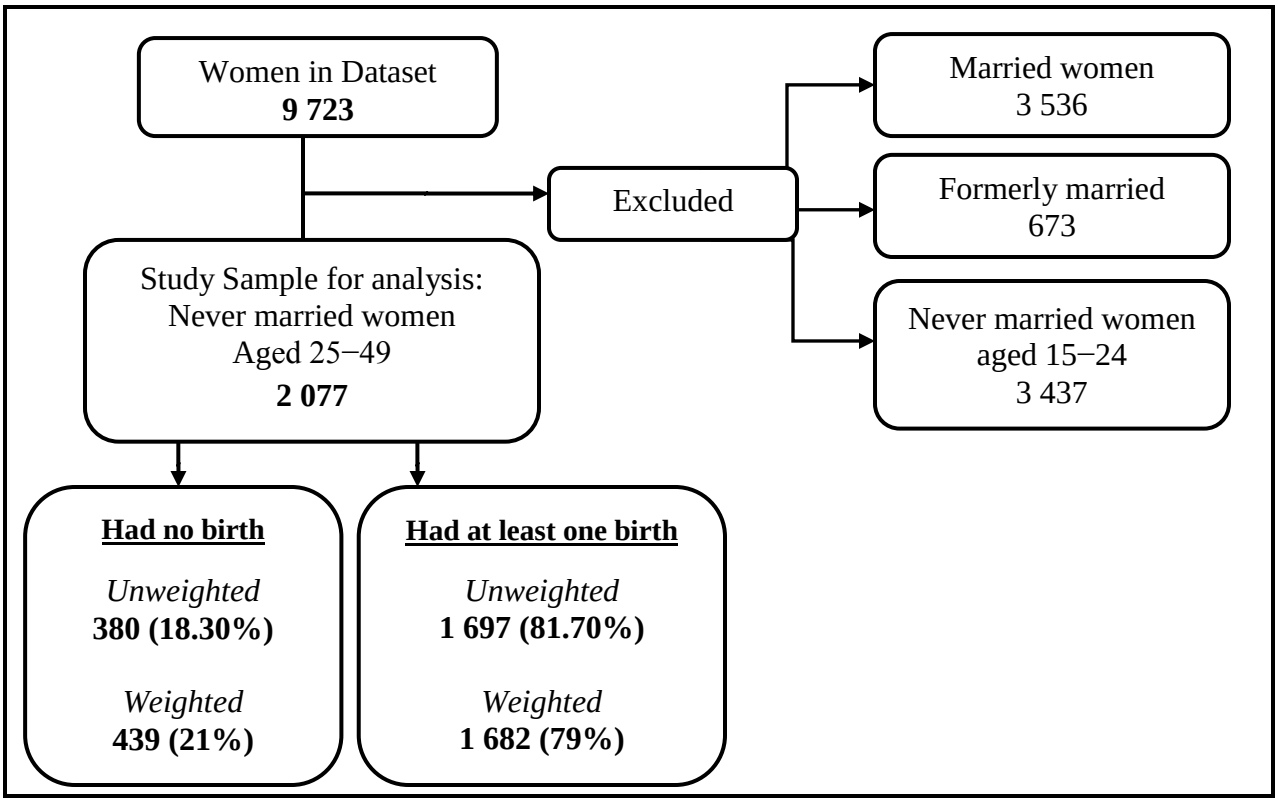

Figure 2: Sample Size Selection for the Study

3.6 Data methods

3.6.1 Outcome variable

The outcome variable for the study was never-married fertility defined as having at least one live birth among women that have never-married. This variable did not originally exist on the DHS dataset. It was obtained from the children ever born variable (v201) in the dataset, defined as the total number of children ever born to a woman. Before data manipulation, the children ever born variable had a denominator consisting of all women of childbearing years, and it was a continuous, discrete variable. However, since this study was limited to never-married women, during data manipulation other marital status categories were removed. Moreover the outcome variable had only two possible responses, therefore the children ever born variable was recoded as 0, and as 1 taking on 0 if a never-married woman had no birth, and 1 if they had at least one birth. The code 0 was label defined as “No”, while 1 was label defined as “Yes”.

3.6.2 Independent variables

Table 1 shows the independent variables used in the study. The independent variables were selected based on literature, and they include age of respondent, highest educational level, household size, place of residence, occupation, household wealth index, ethno-linguistic group, religion, age at sexual debut, ever having used contraceptives, and lifetime number of sexual partners. These variables were sub-divided into demographic variables, socioeconomic variables and behavioural variables.

Table 1 indicates that under the demographic characteristics, age comprised of never-married women aged 25−49, in five year intervals. Place of residence was the geographic area in which the respondents were interviewed, and was categorised as either urban or rural. Another demographic variable was household size, defined as the total number of people living in the same household as the respondent at the time of the survey. The 2006−2007 Namibian Demographic Health Survey reported an average household size of 4.5 in Namibia. Based on this report, household size was segregated into households with five and above members (5+) and households with four and below household members indicated by (<4).

Highest level of education, household wealth index, occupation, religion and ethno-linguistic group were used as indicators of socio-economic status. The highest level of education was categorised into three categories namely no education, primary education as well as the secondary and higher category. The household wealth index was used as a proxy measure for the cumulative living standard of the household the respondent comes from, and it was coded as poor, middle and rich. The occupation variable was used as an indicator of the respondents' living standard. The 2006−2007 Namibian Demographic and Health Survey had no ethnicity variable; however some studies have used language as a proxy for ethnicity in Namibia. Likewise, in this study ethnicity was defined in terms of the main language spoken by the respondent at home. Literature shows that in Sub-Saharan Africa, ethnic groups are multifaceted and diverse in their behaviours and social norms; as such one can expect ethnic differentials in non-marital fertility. In the dataset, the variable religion consisted of four categories, namely no religion, Catholic, Protestants and other. In this study, persons in the other category and those with no religion were merged together to form the other category, while the Catholic and Protestants' categories were left separate.

Table 1 also presents the behavioural variables used in the study. Ever-use of contraceptives was categorised into a dichotomous variable, consisting of never-used and ever-used categories. The age of respondent at first sexual debut was used as a continuous variable in the analysis, as it is an important indicator of the respondent's exposure to never-married fertility. The variable lifetime number of partners was used to show the differential risk of being a never-married mother, by the total number of sexual partners a respondent has ever had. This variable was used as a continuous variable.

Table 1: Independent variables utilised in the study and coding

Variable code	Variable name	Original code	How coded in this study
Demographic V013	Age of Woman	15-19 (1) 20-24 (2) 25-29 (3) 30-34 (4) 35-39 (5) 40-44 (6) 45-49 (7)	25-29 (1) 30-34 (2) 35-39 (3) 40+ (4)
V136	Household Size	Discrete continuous from 1 to 33 members	<=4 (1) 5+ (2)
Socioeconomic V106	Highest level of education	No education (0) Primary (1) Secondary (2) Higher (3)	No Education (0) Primary (1) Secondary and Higher (2)
S119	Ethno-linguistic group	Afrikaans (1) Damara/Nama(2) English(3) Herero(4) Kwangali(5) Lozi(6) Oshiwambo(7) San(8) Subbia(9) Other(10)	Oshiwambo (1) Afrikaans (2) English (3) Damara/Nama (4) Herero (5) Kwangali (6) Lozi (7) Subbia (8) Other (9)
V130	Religion	No religion(0) Catholic(1) Protestant(2) Other(4)	Catholic (1) Protestant (2) Other (3)
V717	Occupation	Not working (0) Professional/technical/managerial (1) Clerical (2) Sales (3)	Not Working(0) Professional, Clerical & Services (1) Sales (2) Manual labour(3)

Variable code	Variable name	Original code	How coded in this study
		Services (4) Agriculture(5) Skilled manual (6) Unskilled manual (7) Other (8)	
V025	Place of residence	Urban (1) Rural (2)	Urban (1) Rural (2)
V190	Household wealth index	Poorest(1) Poor(2) Rich(3) Richer(4) Richest(5)	Poor (1) Middle (2) Rich (3)
Behavioural V302	Ever having used contraceptives	None(0) Folkloric(1) Traditional(2) Modern(3)	Never Used (0) Ever Having Used (1)
V525	Age at sexual debut	Discrete continuous from age 10 to 43	Discrete continuous from age 10 to 43
V836	Number of lifetime partners	Discrete continuous variable ranging from 1 partner to 30	Discrete continuous variable ranging from 1 partner to 30

3.7 Data management and analysis

3.7.1 Data analysis

This study used Stata version 12 to analyse and manage the data. This section looks at the type of analysis conducted and statistical explanation of the analysis. Statistical procedures used to examine the relationship between the outcome variable (never-married childbearing) and the various predictors of never-married women's childbearing are:

- *Descriptive Analysis (Bivariate Cross Tabulations and Age specific fertility rates)*
- *Analytical Analysis (Bivariate and Multivariate Binomial Logistic Modelling)*
- *Multicollinearity Diagnostics*

All the tests were conducted at the 5% level of significance and at a confidence interval of 95 percent.

3.7.2 Descriptive statistics

To meet the three specific objectives, data analysis was divided into descriptive statistics involving cross-tabulations, as well as estimating age specific fertility rates and analytical analysis involving bivariate and multivariate binomial logistic modelling. The first specific objective was to examine the pattern of childbearing among never-married women. To meet this objective, this section began by determining the representation of the dependent variable through a pie chart. Thereafter, the distribution of never-married women's fertility by their characteristics was examined using cross tabulations. The results of the cross tabulations were presented in a table displaying the frequencies and percentage distribution of predictor variables. The descriptive statistics on the outcome variable and the predictor variables provided a foundation for the analytical statistics.

To meet the second objective, which was to compare the age specific fertility rates of the study population (never-married women), married women and the general population of Namibian women. The age specific fertility rates were computed using the Stata TFR2 module, which allows for the conversion of birth records into a tabulation of births and total women exposed by age group. Birth records, also known as birth histories, provide information on women's lifetime number of live births, including the dates, months and years of the births. The Stata TFR2 module was primarily designed for use with DHS data, with the aim of computing indicators such as age specific fertility rates, total fertility rates and differentials in fertility by background factors over various periods of time (Schoumaker, 2013). The weighting factor is automatically applied when computing the births and the women exposed to the risk of giving births within the specified time period.

The age specific fertility rates were calculated by dividing the sum of births (to a specified group of women) by the number of women in the age group who were exposed to the risk of giving birth in the specified time period. One advantage of the TFR2 module is that it produces rates that are exactly similar to the DHS reports, and allows for the computation of rates that are not present in the DHS report; in this case never-married and married women's age specific fertility rates (Schoumaker, 2013). These rates were presented for the three years prior to the 2006−2007 NDHS 2005 through to 2007. In order to provide current rates as well as to avoid sampling errors

and birth displacements, the three year period was chosen, instead of longer or shorter periods (MoHSS Namibia and Macro International Inc, 2008).

3.7.3 Bivariate binomial logistic modelling

The third specific objective was to identify the factors that predispose never-married women to having children. This objective was met by conducting both the bivariate and multivariate level analyses. Bivariate binomial logistic regression was used to examine the independent effect of each of the factors on never-married women's childbearing.

3.7.4 Multivariate logistic regression

The bivariate level binomial logistic partially met the third specific objective, since it examined the significance of the relationship between two categorical variables, that is, one independent variable and one outcome variable, and as a result, it does not account for covariates (Hilbe, 2009). Hence, in order to meet the third specific objective conclusively, multivariate binomial logistic modeling was also employed to estimate independent effects of each predictor variable, while controlling for the effects of other variables (Hilbe, 2009). The binomial logistic regression model was appropriate as the outcome variable was a binary categorical variable. A binary variable is a variable with only two possible outcomes, and for this study, the outcome variable is never-married women's fertility. The outcome variable was divided into women who have never had a birth, and women who have had at least one live birth coded as zero and one, respectively. The code one indicated that the outcome of interest (having a birth) was present, while the code zero indicated that it was not present (have had no birth).

The output of a logistic regression gave odds ratios, p-values and confidence intervals. The odds ratios output given by the binomial logistic regression if greater than one, indicated that for a particular category of a variable, the probability of experiencing a birth was greater than for the reference category. An odds ratio less than one indicated a lower likelihood of experiencing a birth for a particular category of a variable compared to the reference category. All tests were conducted at the five percent level of significance and at a confidence interval of 95 percent.

The odds for an exposed subject were defined as:

$\frac{p}{(1-p)}$ to 1 where p was defined as the probability of a never-married woman having a child outside of marriage. As multivariate logistic regression examines the impact of more than one predictor variables on never-married fertility, where the model used was:

$$\mathbf{Ln\ [\frac{p}{(1-p)}\ ] = \beta_0 + \beta_1\ x_{i1} + \beta_2\ x_{i2} + \beta_3 x_{i3} ..... \beta_p\ x_{ip} + \epsilon_i}$$

Where:

β_0 is the constant (value of y when x is 0)

$[\frac{p}{(1-p)}]$ is the log odds ratio

$\beta_1\ x_{i1} ..... \beta_p\ x_{ip}$ represents the several predictor variables

ϵ_i- represents variability in the outcome not explained by the model

The equation for the variables was as follows:

$$\mathbf{Ln\ [\frac{p}{(1-p)}\ ] = \beta_{0Intercept} + \beta_{1Age\ of\ woman}\ \beta_{2Eethno\text{-}linguistic\ group} + \beta_{3Education} + \beta_{4Place\ of\ Residence} + \beta_{5Religion} + \beta_{6HouseholdWealth} + \beta_{7Occupation} + \beta_{8HouseholdSize} + \beta_{9EverUsedContraceptives} + \beta_{10Lifetime\ Partners} + \beta_{11Age\ at\ Sexual\ Debut} + \epsilon_i}$$

3.7.5 Colinearity diagnostics

Predictor variables carry the assumption of independence. A strong association between two or more predictor variables in a regression model suggests the presence of multicolinearity, which can influence their level of significance. In this study, multicolinearity was tested for where the Variance Inflation Factor (VIF) and Tolerance (1/VIF) were assessed. The VIF indicates whether or not a predictor has a strong relationship with other predictors. A value of ten or more indicates a problem with multicolinearity. A Tolerance value of 0.1 or more gives the same indication (Hilbe, 2009).

3.7.6 Ethical considerations

The study was based on already-existing data from the Namibian Demographic and Health Survey, hence ethical consideration was not an issue, as the 2006−2007 Namibian DHS survey

involved a generic ethics process during data collection. The main objective of the DHS programme was to assist countries in the collection of data on demographic and health indicators. The DHS program submitted its survey protocol to the Namibian Ministry of Health and Social Services (MoHSS Namibia and Macro INC, 2008). The protocol was evaluated and accepted by the Ethical Clearance Committee of MoHSS. During data collection, respondents' participation was voluntary, and only consisted of those who consented to participation. Respondents were debriefed before the data collection process and the protocol for collection and analysis was based on the anonymity protocol developed by the measure DHS.

NB: PLEASE READ CHAPTER 6 IN LIEU OF THE RESULTS (POSTSCRIPT)

CHAPTER 4:

RESULTS

4.0 Introduction to the chapter

This chapter presents and interprets the results of the statistical and demographic analysis conducted on the quantitative data sourced from the 2006−2007 Namibian Demographic and Health Survey (NDHS). The first specific objective was to examine the pattern of childbearing among never-married women. In order to meet this objective, cross tabulations of the 2006−2007 NDHS data for never-married women aged 25−49 were conducted to examine the distribution of never-married fertility by the selected characteristics. The results of frequency statistics such as tabulations and distribution plots were presented and interpreted both for the dependent variable, and the independent variables. To meet the second specific objective, which was to compare the fertility pattern of never-married women, married women and the general population the TFR2 module was used to calculate age specific fertility rates. The third specific objective was to identify the factors predisposing never-married women to have children. In order to meet this objective, bivariate and multivariate binomial logistic models were conducted. As such, this chapter ends with the results for the bivariate and multivariate binomial logistic models, which are presented, discussed and interpreted.

4.1 Descriptive Statistics

4.1.1: Examination of never-married women's fertility

Figure 3 below illustrates the percentage distribution of the fertility of never-married women between 25−49 years of age. It demonstrates that at the time of the 2006−2007 NDHS survey, **79%** of never-married women aged 25−49 had at least one live birth, while **21%** had never had a birth. The evidence here showed that never-married women in Namibia had a higher probability of having had at least one live birth.

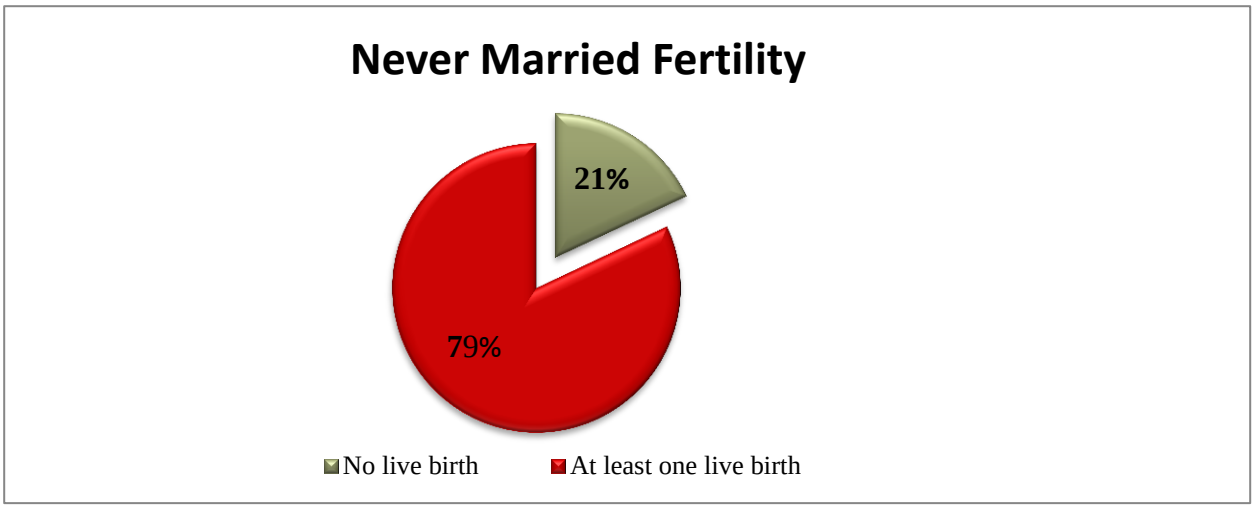

Figure 3: Percentage distribution of never-married fertility in Namibia

4.1.2 Bivariate descriptive statistics

Table 2: Percentage distribution of never-married women and fertility by selected characteristics

Characteristic	Never had a live birth N=439	Had at least one live birth N=1,682	Total	
			Number N=2,121	Percentage
Demographic:				
Age of woman in 5 year intervals				
25-29	61.66	**36.86**	891	**41.99**
30-34	22.65	27.37	560	26.40
35-39	7.87	16.93	319	15.06
40^{+}	7.82	18.83	351	16.55
Family Size				
<=4	47.36	33.07	764	36.03
5+	52.64	**66.93**	1,357	**63.97**
Place of Residence				
Urban	65.10	48.68	1,105	**52.07**
Rural	34.90	**51.32**	1,017	47.93
Socioeconomic:				
Highest level of education				
No education	2.98	5.39	104	4.90
Primary Education	5.76	27.16	482	22.73
Secondary and Higher education	91.26	**67.45**	1,535	**72.37**
Religion				
Roman Catholic	19.75	20.97	438	20.72
Protestant	79.35	**78.12**	1,655	**78.38**
Other	0.91	0.91	19	0.91

Ethno-Linguistic group				
Oshiwambo	67.19	**60.55**	1,313	61.92
Afrikaans	8.60	6.03	139	6.56
English	4.01	0.35	23	1.11
Damara/Nama	5.57	13.94	259	12.21
Herero	3.20	11.77	212	9.99
Kwangali	1.42	2.49	48	2.27
Lozi	0.22	1.38	24	1.14
Subbia	1.03	1.04	22	1.04
Other	8.76	2.46	80	3.77
Household wealth index				
Poor	20.47	34.57	671	31.66
Middle	14.12	20.89	414	19.49
Rich	65.41	**44.53**	1,036	**48.85**
Occupation				
Not working	26.31	**33.85**	681	**32.29**
Professional;services; clerical	37.16	27.47	621	29.47
Sales	21.31	24.69	506	23.99
Manual labour	15.23	13.99	300	14.25
Ever having used Contraception	37.16	14.12	401	18.89
Never	62.84	**85.88**	1,721	**81.11**
Ever				
Age at sexual debut				
Mean age	20.91	19.03	19.33	
% and total	16.31	83.69	1,993	
Number of lifetime partners				
Mean number	2.31	2.80	2.72	
% and total	15.84	84.16	1963	

Table 2 depicts the results of the cross tabulations. The table demonstrates that out of the 2,121 never-married women a total of 1,682 (79%) never-married women had experienced a birth while 439 (21%) had never borne a child. The results illustrate that out of the 79% never-married women who reported having had a birth 37% were aged 25-29, 27% were aged 30-34, 17% were in the age cohort 35 to 39 and 19% were aged 40 and older. The possibility of being a never-married mother seemed to be higher for never-married women aged 25-29, and those aged 30-34, even though it continued to be sizeably high even at later ages.

Table 2 further reveals that on average 67% of never-married women with children came from family sizes equal or above five, as compared to 33% of respondents from family sizes of four or less. There were differentials in never-married fertility by place of residence. With regards to

place of residence the proportion of women who were never-married mothers varied from 51% in rural areas to 49% in urban areas.

In terms of ethnicity, Table 2 demonstrates that the main contributions to never-married fertility were from the Oshiwambo group, at 61%, followed by the Damara/Nama and Herero at 14%, and 12%, respectively. A higher proportion of never-married women with children reported being of the Protestant religion (78%) compared to 21% Catholics, and close to 1% categorised as other. Furthermore, the results showed that about 67% of the respondents with never-married births had secondary or higher education, as compared to 27% of respondents with primary education, and 5% with no education. Table 2 further illustrates that amongst never-married mothers, 45% were from rich households, in contrast to 35% from poor households, and 21% from households of average wealth. Additionally, the results also showed that among never-married women with children; 34% were not working, 27% were professional, services or clerical workers, 25% were sales workers and 14% were manual labourers.

Lastly, the bivariate descriptive results (Table 2) showed the distribution of never-married fertility by behavioural variables, namely number of lifetime partners, age at sexual debut, and ever having used contraception. It is interesting to note that 86% of never-married mothers had used family planning, while 14% reported never using family planning. With regards to age at sexual debut, the mean age at first sexual debut for never-married women who have had a birth was 19 years. The mean age at sexual debut for never-married women with no birth was slightly higher, at approximately 21 years. Never-married women with a lower mean number of life time partners (2.3 lifetime partners) were less likely to report having had a birth, while never-married women with a mean of 2.8 lifetime partners had the highest percentage of never-married fertility at 84 percent.

4.2 Current fertility: Age-specific fertility rates

This section presents the age-specific fertility rates (ASFR) for all women, for married women and for never-married women aged 25−49 using the 2006−2007 Namibian DHS (NDHS). These rates were calculated using the TFR2 Stata module that uses births in the three years preceding

the 2006−2007 NDHS as the numerator and number of women in the last three years by five year age group as the denominator.

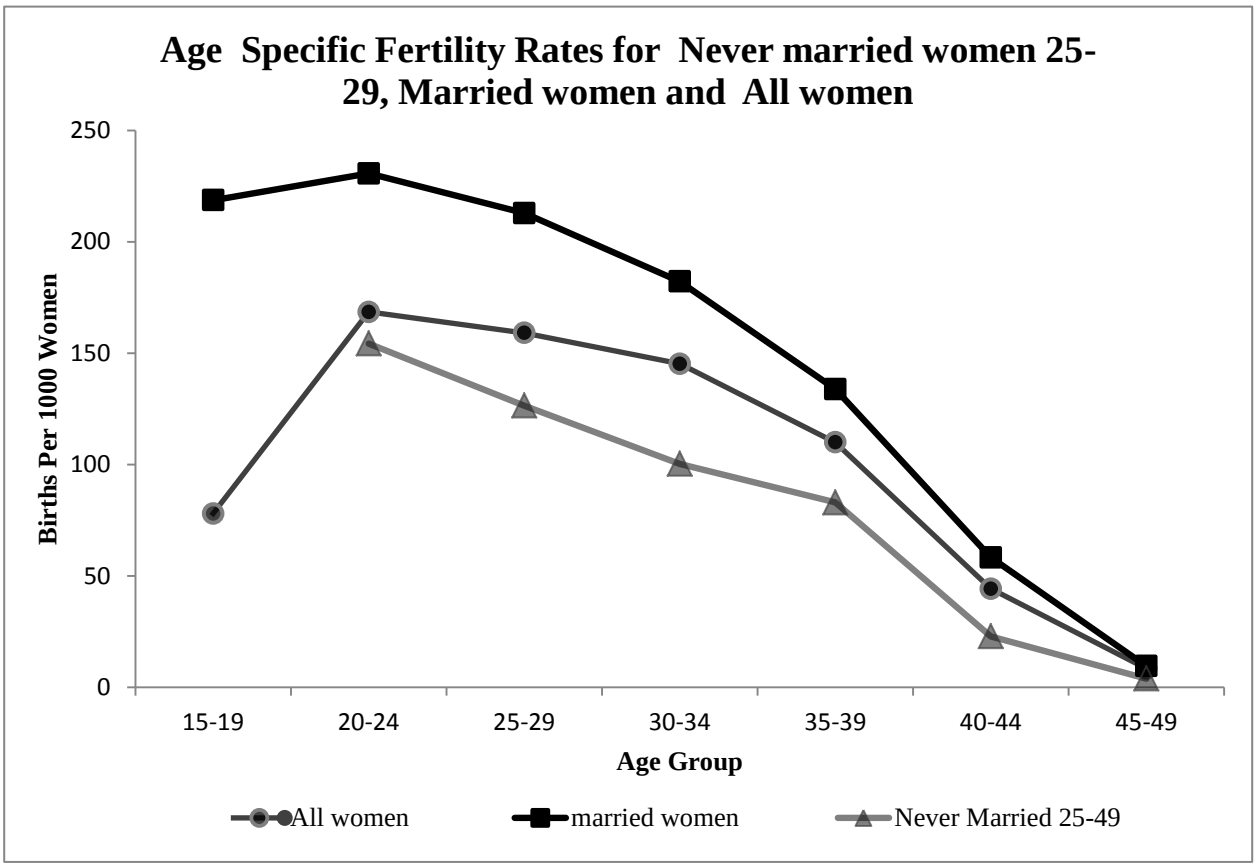

Figure 4: Age specific fertility rates for women of all ages and never-married women aged 25−49 using births in the last three years (2005, 2006 and 2007) preceding the 2006−2007 NDHS.

The results in Figure 4 show that childbearing starts early for all women in Namibia, and continues throughout the reproductive ages. In general, it is observed from Figure 4 that married women had higher fertility rates than both never-married women and the general population of women in Namibia. Married women aged 15-19 had over two times higher age specific fertility rates than the general population of women in the same category. Married women in Namibia had higher fertility rates than never-married women at all ages. At ages 20-24 the magnitude of the difference was wider however, this continued to narrow down with increasing age. The results revealed that for all women, childbearing peaked between the ages 20-24 (168 births per 1000 women), and then declined sharply after the age of thirty-four. The age-specific fertility rates for all women were comparable to the age-specific fertility rates in the 2006−2007 NDHS report. Notably, the age-specific fertility rates were higher for all women in comparison to never-

married women between 25−49 years of age. Furthermore, the results presented in Figure 4 show that in the last three years prior the 2006−2007 NDHS, a sizable proportion of births were to never-married women aged 20-24, at 154 births per 1000 never-married women aged between 20-24, although this was lower than the age specific fertility rates for the same age group of the general female population (168 births per 1000 women aged between 20-24), the number was small. Age specific fertility rates for never-married women peaked between ages 20-39, and decreased sharply from age 40 onwards.

4.3 Bivariate and multivariate binomial logistic regression

To meet the third specific objective bivariate and multivariate binomial logistic regressions were conducted so as to identify the factors associated with never-married women's fertility. The bivariate logistic regression was done to produce unadjusted odds ratios. The results are presented in Table 3 below. For the multivariate level, Table 3 also presents the adjusted odds ratios for the full model, where all the independent variables were put in the binomial logistic regression. The adjusted odds ratio results indicated that when adjusting for other covariates, the significant predictors predisposing never-married women to have children in Namibia were: age of woman; ethno-linguistic group; family size; household wealth index; place of residence; ever having used contraception; age at sexual debut; and number of lifetime partners; while occupation, education and religion were not statistically significant at the five percent level of significance and at a 95% confidence interval.

At the bivariate level, overall all the demographic factors, namely age of woman, family size, and place of residence, were substantively significant at thefive percent level of significance. Table 3 below shows that at the bivariate level, age of woman was related to increased odds of being a never-married mother. The unadjusted odds ratios showed that never-married women in the age cohort 35−39 were approximately 3.6 times more likely to be never-married mothers than the cohort between 25−29 years of age. Never-married women aged 40 and above had some four times greater odds of being never-married mothers than never-married women between 25−29 years of age. In general, the odds ratios stipulated that the likelihood of being a never-married mother was lowest for women aged 25−29, as compared to subsequent age cohorts.

The adjusted odds ratios also showed a positive relationship between age of woman and never-married fertility. The adjusted odds ratio results indicated that the age of woman was a statistically significant predictor of never-married fertility, when adjusting for the effect of other independent variables considered. Furthermore, in comparison to never-married women aged 25−29, the odds of being a never-married mother increased with age. The adjusted odds for never-married women aged 30−34 increased from the bivariate level odds ratio of 2.0 and became 2.75 times more likely to experience a birth than never-married women between 25−29 years of age. The adjusted odds ratio in Table 3 also demonstrate that never-married women aged 40 and above were over seven times more likely to be never-married mothers than women aged 25−29, which was three times higher than the odds at the bivariate level. These results provided evidence that age was a strong predictor of never-married women's fertility, with a p-value less than one percent, both at the bivariate and at the multivariate level.

It is shown in Table 3 that never-married women from family sizes of five and above had an 82 percent net increase in the odds of having experienced a birth, when compared to those from households with four or less members at the bivariate level. At the multivariate level, the odds ratio for family size slightly increased, when controlling for the effect of other variables to 85 percent. The unadjusted odds ratios further demonstrated that never-married women living in rural areas were approximately 67 percent, and more likely to experience never-married motherhood than their counterparts, who were urban dwellers. The significance of the relationship between place of residence and never-married fertility at the adjusted level decreased. However, it continued to show similar differentials in never-married fertility by place of residence, noted at the bivariate level, and in the same direction. When taking into account the effect of other covariates, never-married women from rural areas were approximately 63 percent more likely to be never-married mothers than urban dwellers.

Also presented in Table 3 are the bivariate and multivariate logistic regression results for the relationship between ethno-linguistic group and never-married fertility. According to the table, the probability of being a never-married mother varied among ethno-linguistic groups in Namibia. The bivariate results showed statistically significant relationships between never-married fertility and four ethno-linguistic categories, namely the English, Herero, Kwangali, and ethnic groups in the other category. The Afrikaans, Kwangali, Lozi and Subbia ethno-linguistic

denominations were not statistically significant at the 5 percent level of significance, and at a 95 percent confidence interval. At the multivariate level, the same results were obtained. The Oshiwambo ethno-linguistic group constituted 58 percent of the population in Namibia. In comparison to the Oshiwambo ethno-linguistic group, the English were found to be 90 percent less likely to have experienced a birth at the bivariate level. Even after controlling for the effect of other factors, the English were still less likely to have experienced a birth than were the Oshiwambo, even though the odds slightly changed to 89 percent. The unadjusted odds ratios show that in comparison to the Oshiwambo the Damara/Nama ethno-linguistic group was associated with a 2.8 times increased odds of a birth; however at the multivariate level, the odds decreased to 2.3 times. The results in Table 3 also show that the Herero group were associated with increased odds of a birth. The Herero were found to be close to 2.5 times more likely to be never-married mothers when controlling for the effect of other covariates, while the independent effect of the Herero group resulted in an odds ratio that increased by a factor of four in comparison to the Oshiwambo group. Being in the other category was protective against never-married fertility, and was associated with a 70 percent reduction in the odds of experiencing a birth when taking into account covariates.

In Table 3, the unadjusted odds ratio results demonstrated that never-married women with secondary or higher education had a 59 percent reduction in the odds of being never-married mothers than their counterparts who were not educated. Although primary education was not significantly associated with never-married women's childbearing, both at the bivariate and at the multivariate level, the odds ratio showed that never-married women with primary education had a 2.6 times greater chance of being never-married mothers than never-married women with no education. Nonetheless, as far as education is concerned, from Table 3 it is observed that education does not significantly contribute to the fit of the model, both at the multivariate level.

The adjusted odds ratios showed that never-married women who were more educated (secondary or higher education), were less likely to have children outside of marriage. Their odds of a birth were 61 percent less than the odds for never-married women with no education. This finding was contrary to the hypothesis of this study, that never-married women with secondary and above education are more likely to be never-married mothers, than those with primary or no education.

NB: PLEASE READ CHAPTER 6 IN LIEU OF THE RESULTS (POSTSCRIPT)

Table 3: Bivariate and multivariate logistic regressions for the analysis of factors predisposing never-married women aged 25−49 to have children in Namibia

Characteristic	Bivariate Analysis: Unadjusted Odds Ratio		Multivariate Analysis: Adjusted Odds Ratio	
	Odds Ratio	95% CI	Odds Ratio	95% CI
Demographic:				
Age of woman				
25-29 (R.C)	1.00		1.00	
30-34	2.00**	1.56 - 2.62	2.75**	1.94 - 3.91
35-39	3.60**	2.46 - 5.27	5.80**	3.41 - 9.85
40^{+}	4.03**	2.75 -5.89	7.08**	4.00 - 12.53
Family Size				
<=4 (R.C)	1.00		1.00	
5+	1.82**	1.47 - 2.25	1.85**	1.38 - 2.48
Place of Residence				
Urban (R.C)	1.00		1.00	
Rural	1.67**	1.33 - 2.10	1.63**	1.09 - 2.44
Socioeconomic:				
Highest level of education				
No Education (R.C)	1.00		1.00	
Primary	2.61**	1.29 - 5.27	1.60	0.55- 4.64
Secondary or Higher	0.41**	0.23 - 0.74	0.39*	0.15 - 0.97
Ethno-linguistic Group				
Oshiwambo (R.C)	1.00		1.00	
Afrikaans	0.78	0.52 - 1.16	1.47	0.84 - 2.59
English	0.10**	0.04 - 0.25	0.11**	0.03 - 0.36
Damara/Nama	2.78**	1.80 - 4.30	2.27**	1.34 - 3.85
Herero	4.08**	2.34 - 7.11	2.49**	1.29 - 4.83
Kwangali	1.95	0.83 - 4.56	0.95	0.34 - 2.66
Lozi	6.84	0.90 - 51.80	4.21	0.51 - 34.53
Subbia	1.12	0.39 - 3.17	0.60	0.18 - 1.96
Other	0.31**	0.20 - 0.49	0.30**	0.16 - 0.56
Religion				
Roman Catholic (R.C)	1.00		1.00	
Protestant	0.93	0.71 - 1.21	0.85	0.59 - 1.22
Other	0.94	0.30 - 2.92	0.93	0.15 - 5.85
Occupation				
Not Working (R.C)	1.00		1.00	
Professional	0.57**	0.44 - 0.75	1.03	0.70 - 1.51
Sales	0.90	0.67 - 1.32	0.82	0.51 - 1.24
Manual labour	0.71	0.51 -1.19	0.66	0.42 - 1.05
Household Wealth Index				
Poor (R.C)	1.00		1.00	
Middle	0.85	0.51 - 1.42	0.85	0.51 - 1.41
Rich	0.42**	0.25 - 0.70	0.39**	0.24 - 0.66
Behavioural:				
Ever having used contraception				
Never (R.C)	1.00		1.00	

Ever	3.60**	2.83 - 4.56	2.95**	1.97 - 4.42
Age at Sexual Debut Continuous	0.88**	0. 85- 0.90	0.85**	0.81- 0.89
Number of lifetime partners Continuous	1.18**	1.08 -1.29	1.09*	1.00 - 1.18
Number of Observations = 1,924 LR chi2 (25) = 415.77 Prob > chi2 = 0.0000 Pseudo R^2 = 0.2449 Log Likelihood = -641.05				

R.C= Reference category Significance= **[p<0.01] or * [p<0.05]

According to Table 3 for occupation, there was an inverse relationship of the odds ratios. Never-married women in the professional, services and clerical category, were 43 percent less likely to be never-married mothers than those who are not working. As such, at the bivariate level, being in the professional, services and clerical occupation category was significantly associated with never-married fertility. While the manual labour category was not significant the odds ratio revealed that never-married women in this category's likelihood of being never-married mothers decreased by 10 percent over that of never-married women who were not working. A p-value below 0.05 indicates statistical significance; at the multivariate level all the occupation categories did not have a statistically significant relationship with never-married fertility, based on their p-values that were greater than 0.05.

In terms of household wealth index, the unadjusted odds ratios showed that never-married women who were poor, had a higher likeliness of giving birth, as compared to those ranked middle-income or rich. However, the middle-income category was not statistically significant. The odds ratio for the rich was 0.42; therefore never-married women from rich households had a 58 percent less chance of giving birth, than never-married women from poor households. When controlling for the effect of other covariates, the variable household wealth's adjusted odds ratios indicated that never-married women from rich households had a 60 percent reduction in the odds of having children outside of marriage, when compared to women from poor households. Even though the odds ratio for women from the average wealth households' was not statistically significant, their odds ratio indicated that they were 15% less likely to be never-married mothers, than never-married women from poor households, when controlling for other selected variables.

Table 3 shows that behavioural variables of interest, namely number of lifetime partners, age at sexual debut and ever having used of contraception, significantly predictive of never-married fertility. At the bivariate level the likelihood of being a never-married mother also increased by 18% for every one unit increase in the number of lifetime partners. A positive association was also observed in the multivariate results, which indicated a 9% increased possibility of a birth, accompanying the increase in the number of lifetime partners. Furthermore, with regards to age at sexual initiation, both the bivariate and multivariate results, indicated that with increasing age at sexual debut, the probability of being a never-married mother decreases by 12% and 15%, respectively. As such, the results presented in Table 3 suggest the existence of an inverse relationship between age at sexual debut and never-married fertility.

Notably, never-married women, who reported having ever having used contraception in the past, were over three times more likely to have experienced a birth than those who have never used contraception at the bivariate level. These results were unexpected, given that one of the study hypotheses was that women who report ever using of contraception were less likely to be never-married mothers. Contraception has been shown in the literature to be an inhibiting factor in fertility. Yet, for this study, when controlling for covariates, never-married women who have ever having used contraception were 3 times more likely to be never-married mothers, than never-married women who have never used contraception. In addition the direction of the odds ratios at the bivariate level was consistent with the odds at the multivariate level. **Table 3** shows that when all independent variables were included in the model, overall the test was statistically significant, with a likelihood ratio chi-squared statistic of 415.77 for 25 degrees of freedom and a corresponding negligible p-value of 0.000.

4.4 Multicolinearity diagnostics

According to the colinearity diagnostics for the multivariate binomial logistic regression model, none of the variables are of concern with regards to multicolinearity and standard errors. As a rule of thumb, VIF > 10, or 1/VIF (tolerances) < 0.05 may merit further investigation. This study obtained a mean VIF of 3.69, which is lower than 10; indicating that overall, the model has no multicolinearity and none of the variables should be removed or interpreted with caution.

CHAPTER 5:
DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction to chapter

This chapter begins by discussing the results of the analysis of the relationship between never-married fertility, and the various independent variables of interest. In order to give the study context, the discussion will incorporate findings from other studies. The conclusion is then drawn from the findings of the study. This chapter will end with study implications and recommendations.

5.1 Discussion

The question this study set to answer was, "what factors predispose never-married women to have children in Namibia"? Data analysis happened in three stages, namely descriptive statistics, bivariate binomial logistic regression as well as multivariate binomial logistic regression, in order to meet the study objectives. The first specific objective was to examine the pattern of childbearing among never-married women. This objective was met by the descriptive statistic level of analysis involving cross tabulations. The second specific objective was to compare the fertility pattern of never-married women, married women and the general population of women in the country. Age-specific fertility rates were calculated for the three years preceding the 2006−2007 Namibian Demographic and Health Survey (NDHS) using the TFR2 module.

The findings of this analysis after applying the weighting factor showed that 21% of Namibian women aged 25−49, who were never-married, had never given birth, while 79% had at least one live birth. This finding conformed with other studies that found high levels of non-marital fertility in Southern Africa. A recent study by Mbanefo (2013) provided comparative proportions of never-married mothers in some Southern African countries. The study found the levels at 75% in Swaziland, 44% in Lesotho and 24% in Zimbabwe. As such, with 79% of never-married women having had a birth, Namibia supports the assertion of high never-married fertility in Southern Africa, and is potentially an area of high pockets of never-married fertility, not only relative to other Sub-Saharan countries, but also to other Southern African countries. According to Westoff (2003), the increases in the proportion of single mothers have been higher in Southern

African countries, due to increased age at first marriage, declining marriage rates as well as premarital sexuality and fertility (Mbanefo, 2013).

In terms of highest level of education, a higher percentage of never-married women 25−49 were classified as having either secondary or higher education in Namibia at 67 percent with only three percent having no education at all and close to six percent having primary education. This showed that Namibia has made great educational strides among never-married women. This was highly impressive particularly as education is closely linked to socio-economic development. This study also found that on average 62 percent of never-married women in Namibia came from the Oshiwambo ethno-linguistic group, 12 percent from the Damara/Nama group, ten percent from the Herero ethno-linguistic group and seven percent from the Afrikaans group. The distribution of never-married women according to the wealth status showed that approximately half (49 percent) of never-married women came from rich households, while 19 percent were from average households and 32 percent were from poor households. The results also showed that 81 percent of the respondents had experience using contraceptives in Namibia. The prevalence was very high however; it contrasted with the high rates of never-married mothers at 79 percent.

The results of the bivariate cross-tabulations showed that out of the 79 percent never-married women who reported having experieced a birth, 37 percentwere aged 25−29, 27 percent were aged 30−34, 17 percent were in the age cohort 35-39 and 8 percent were aged 40 and above. The probability of being a never-married mother was discernibly higher for never-married women aged 25−29, and those aged 30−34, even though it continued to be sizeably high at later ages. A higher proportion of never-married women with children were classified as Protestants (78 percent), and 21 percent were Catholic. The variable highest level of education consisted of the less educated, which comprised never-married women with no education or primary education, and the more educated never-married women with secondary or higher education. The results showed that about 67 percent of the respondents with births were more educated, as compared to 27 percent of respondents with primary education and five percent with no education. This finding can be explained by the high rates of education among never-married women in Namibia. Amongst never-married women with children, 85 percent had the experience of using contraception, while 15 percent had never used any form of contraception in their lifetime. Age

specific fertility rates showed that even though more never-married women report having had at least one child, married women and the general population of women in the country still have higher fertility rates than never-married women.

5.2 Bivariate and multivariate binomial logistic models discussion

The third specific objective was to identify the factors predisposing never-married women to having children in Namibia. This objective was met by conducting both bivariate and multivariate binomial logistic regressions. The chosen significance level of odds ratios was five percent. The significant results are discussed, as they indicate true differences that can be extrapolated from the sample to the population from which the sample was drawn. To increase the reliability of the findings, sampling weights were applied at all levels of analysis.

The bivariate binomial logistic model results indicated a statistically significant relationship between never-married fertility and age of woman. In general, at the bivariate level, the odds ratios stipulated that the probability of being a never-married mother was lowest for women between 25−29 years of age. This positive relationship between age of respondent and never-married fertility was also observed at the adjusted level. Similar to the bivariate odds ratios at the adjusted level, in comparison to never-married women aged 25−29, the odds of being a never-married mother increased with age. With the odds for never-married women aged 30−34 increasing from the bivariate level of 2.5 to being 2.75 times more likely to experience a birth than never-married women between 25−29 years of age. Never-married women aged 40 and above were close to seven times more likely to be never-married mothers than never-married women aged between 25−29, which was three times higher than the odds at the bivariate level. In their study, Subaiya and Johnson (2008) also found an increase in the propensity of being a never-married mother with increasing age, and they posited that this was due to the long length of exposure to premarital sexual relations. This finding was also characteristic of a study by Mbanefo (2013), which found increased odds of single motherhood, with increases in the age of women in Zimbabwe and Lesotho. According to the study, women aged 45 and above were approximately five times and two times more likely to be single mothers, in Zimbabwe and Lesotho, respectively. According to Makatjane (2002) as women age, they are more likely to experience premarital sexual relations, and subsequently non-marital fertility, due to the long time since reaching puberty.

Never-married women from family sizes of five and above had an increased probability of being never-married mothers, both at the bivariate level, and when adjusting for the effect of other covariates. This finding suggests that living in households with more resident members leads to increased odds of a birth among never-married women between 25−49 years of age. Madhavan and Thomas (2005) suggest that this is attributed to the increased number of household members who can assist never-married mothers by rendering childcare services or monetary assistance.

Place of residence was found to be significantly associated with the fertility of never-married women between 25−49 years of age. As such in Namibia, differentials exist in never-married women's fertility by place of residence. When taking into account the effect of other covariates never-married women from rural areas were approximately 63% more likely to be never-married mothers than urban dwellers. This relationship was found in both the bivariate and multivariate binomial logistic models fitted for analysis. These results were unexpected, as this study hypothesised that urban dwellers were more likely to be never-married mothers than they were likely to be rural dwellers. The findings of this study diverge from Calves (2000), who found high non-marital fertility in urban areas of Cameroon than in rural areas. Calves (2000) attributed this to weakened control of sexual relations in urban areas. However, similar to this, Lindstrom et al. (2008) noted that although the risk of having a birth was higher in urban areas, the opportunity costs of time were higher in urban areas, as the women may experience problems in arranging child care and maintaining employment. As such, this leads to a lower probability of experiencing a birth in urban areas, and is also linked to never-married women from urban areas' higher likelihood of being educated, employed and efficient contraceptive users (Bbaale, 2011).

When controlling for covariates, never-married women from the English ethno-linguistic group were associated with an 89 percent reduction in the odds of experiencing a birth in comparison to never-married women from the Oshiwambo ethno-linguistic group. A higher age at marriage is a risk factor for never-married fertility, due to the long exposure to premarital sexual relations. However, Garenne and Zwang (2006) found no association between age at marriage and non-marital fertility among the English. Buttressing the statistically significant inverse relationship between never-married fertility and the English ethno-linguistic, is the conclusion from Garenne

and Zwang (2006) that showed that while the English displayed a high age at marriage, they were characterised by better marriage and economic prospects.

Although the odds ratios slightly decreased at the multivariate level, never-married women from the Herero ethno-linguistic group were associated with a 2.5 increase in the odds of experiencing a birth, when compared to respondents from the Oshiwambo ethno-linguistic group. According to LaFont (2010), traditionally, the Herero practised arranged marriages at early ages. They permitted premarital sexual relations so long as they did not result in pregnancy, where if they did, marriage was an obligation. The finding of this study corresponds with Garenne and Zwang (2009), who found that out of the 263 ethnic groups they analysed in Sub-Saharan Africa, the Herero ethnic group had the highest level of never-married fertility at 76 percent. The same study found the average level per ethnic group to be 21% while the average for Africa was 18 percent.

Respondents from the Damara/Nama had an odds ratio that increased by a factor of 2.3 in comparison to respondents from the Oshiwambo ethno-linguistic group. In an Ethnographic Atlas by Murdock (1967), the Damara or Nama were characterised as an ethnic group that allowed premarital sexual relations, and only applied sanctions like the marriage obligation if they resulted in pregnancy. During colonisation, the Herero and the Damara/Nama were in most contact with the colonisers, and their land was taken from them. As such, familial control over sexual relations was broken, resulting in an increase in never-married fertility. Moreover, migration to find low status jobs increased, and age at first marriage, also increased. Notably, the increased age at marriage among the Herero (30) and the Damara/Nama (27) was attributed to economic instability (Garenne and Zwang, 2005; Garenne and Zwang; 2006; Garenne and Zwang 2009). Interestingly, the Lozi ethno-linguistic group were four times more likely to be never-married mothers, when compared to the Oshiwambo group; however this was not statistically significant at the five percent level of significance, and more likely to be as a result of chance. Garenne and Zwang (2009) found high premarital fertility in Southern African countries (Namibia, Swaziland and South Africa); however, they also found ethnic differentials in levels based on permissiveness of ethnic group to premarital sexuality and fertility.

At the multivariate level, religion was retained in the model as a potential predictor, even though it had no predictive power at the bivariate level. It is, however, interesting to note that

respondents' religious affiliation was not a significant predictor of never-married fertility, both at the unadjusted level, and when taking into account the effect of other variables. A study in Kenya found religion to be a significant factor contributing to never-married women's fertility, with the Protestants displaying increased odds of non-marital fertility when compared to Catholics (Musau, 2012). Contrary to the study discussed above, religion was not associated with never-married fertility in this study. With regard to occupation, there was no significant association between occupation and never-married fertility at the multivariate level, although at the bivariate level, being in the professional, services and clerical occupation category was significantly associated with never-married fertility at the five percent level of significance. They had a 43 percent reduction in the odds of experiencing a birth than women who were classified as unemployed. Gonzalez (2005), examining the determinants of single motherhood, found that never-married mothers were more prevalent in contexts characterised by low marriage prospects, income and employment opportunities. This suggests that never-married women may not be able to fend for their children.

As far as education is concerned, it was observed that education was one of the factors associated with never-married fertility, both at the bivariate and multivariate levels. The adjusted odds ratio showed that never-married women with secondary or higher education were less likely to have children outside of marriage. Their odds of a birth were 61 percent less than the odds for never-married women with no education. At the bivariate level, education was a strong predictor of never- married fertility significant at the one percent level; this changed at the multivariate level with educational attainment having an inverse relationship with never-married fertility, but now significant at the five percent level. Nonetheless, this finding provides evidence that although more educated never-married women may become mothers by choice, in most instances, this is not the case, as a higher proportion of never-married mothers in Namibia have low educational attainment; as such, they are likely not to be economically independent.

In contrast to this study's findings, Meekers and Calves (1997) remarked that in Cameroon, fertility outside of marriage was higher among women who were educated and had a higher likelihood to be employed in the formal sector. These women rationally choose to have births so as to continue maintaining control over their lives (Meekers and Calves, 1997). However, this study revealed that most of the never-married mothers in Namibia had no education, and were

thus less likely to be economically independent. This is because high rates of education for the most part increase the propensity of being productively employed and having high levels of autonomy. Several studies document a negative relationship between education and having children outside of marriage (Musick, 2001; Potts and Marks, 2001; Upchurch et al., 2002). The low fertility among educated never-married women was associated with a lower risk of early childbearing, due to delays brought about by schooling, and increased contraceptive knowledge as well as effective use (Musick, 2001; Potts and Marks, 2001). Given these findings, it was evident that never-married women's education was protective against having a birth.

When controlling for the effect of covariates, the variable household wealth index's odds ratios indicated that never-married women from rich households showed a 60 percent reduction in the odds of having children outside of marriage when compared to women from poor households. Even though coming from middle-income household category was not statistically significant the odds ratios indicated that they were less likely to have a birth than never-married from poor households. This finding was in accordance with a study by Mbanefo (2013), who found women in the poor wealth quintile to be more likely to have children outside of marriage in Southern African countries, namely Swaziland, Lesotho and Zimbabwe. Similar to this study, Clark et al. (2012) in a study conducted in Nairobi, Kenya found a 22 percent reduction in the likelihood of having a child outside of marriage, for the richest compared to the poorest households.

For lifetime number of partners, there was a positive association between never-married fertility and lifetime number of partners. Being a never-married woman with one lifetime partner translated into a lower probability of experiencing a birth. This relationship was observed both at the bivariate and multivariate levels of analysis. At the bivariate level, the probability of being a never-married mother increased by 18 percent while it increased by nine percent at the multivariate level. These findings were comparable to a study by Musau (2012), which found a statistically significant association between number of likely fathers and non-marital fertility in Kenya. The study showed that having more than one lifetime partners increased the odds of being a never-married mother. This was explained by the fact that among the never-married women with a non-marital first birth, 45 percent moved on to another partner, and experienced another birth. One of the reasons that never-married women continue entering into relationships

can be found to be associated with their financial reliance on their partners (De Wet, 2009; Musau, 2009).

In focus group discussions, women reported poverty as one of the main reasons never-married women had a higher number of partners, since they tend to search for financial assistance from men. However, the women fail to properly use contraceptives or to negotiate their use due to their financial dependency on men, thereby leading to an increased likelihood of having non-marital births (Musau, 2009). Literature also asserts that in Sub-Saharan Africa never-married women have a higher propensity of having a high number of lifetime partners, thus increasing their likeliness of being never-married mothers, as the partners want them to prove their fertility before they can marry them. However, the marriage promise is not fulfilled and the women are left with the children (Meekers and Calves, 1997). LaFont and Hubbard (2007) argue that in Namibia, women are required to prove their fertility before marriage. However, the marriage pledge is not fulfilled after the birth of the child. When the women start new relationships, their new partners also expect them to bear children, only for them to be deserted time and again.

The analysis revealed an association between age at first sexual debut and never-married fertility. The mean age at first sexual debut for never-married women who had a birth was 19 years. The mean age at sexual debut for never-married women with no birth was slightly higher, at approximately 21 years. The analysis showed that when holding other factors constant, never-married women who had their first sexual encounter at early ages were more likely to be never-married mothers, than never-married women who had their first sexual encounter at later ages. These results showed that delaying age at sexual debut decreased the chance of being a never-married mother. According to Zaba et al. (2004), in Southern Africa, while women may delay marriage or marry less often, their age at first sexual debut is still young. Age at first sexual intercourse is an important indicator of premarital fertility, as it marks the beginning of exposure to pregnancy (Zaba et al., 2004). Research suggests that early initiation of sexual relations increases the risk of experiencing non-marital fertility (Mensch et al., 2006; Zaba et al., 2004). Mensch et al. (2006) posits that this link is due to low and ineffective contraceptive use at young ages.

The results showed that the likelihood of being a never-married mother was higher for never-married women who reported having used contraception in the past. This finding was unexpected, as contraception has been shown by literature to be an inhibiting factor in fertility. Yet for this study, both at the bivariate and multivariate levels, never-married women who reported ever using contraceptives were approximately three times more likely to be never-married mothers than never-married women who reported never using contraception in their lifetime. As the conceptual framework for this study suggests, ever using contraception can act as a proximate determinant, through which the effect of background factors on never-married fertility manifests. However, it appears that prior research has not been clear on the relationship between contraceptive use and never-married fertility. One reason for this is that women often delay contraceptive use until they have had children. Previous studies assert that factors such as education and labour force participation influence never-married women's contraceptive behaviour, with educated never-married women being more likely to be contraceptives users. However, for this study, the effect of having previously used contraception was counter intuitive, and Garenne and Zwang (2006) posit that this is potentially due to reverse causality, as areas with high pockets of never-married fertility are more likely to use contraception. So far, use of contraception in Namibia has not had a large enough effect to allow never-married women to prevent births.

5.3 Hypothesis test result

Given the findings of the study, in terms of the hypotheses tested, respondents with more education were less likely to be never-married mothers. The multivariate findings showed that the likelihood of being a never-married mother was higher for never-married women who reported having used contraception, than for those who had never used it. These results were unexpected, given that one of the study hypotheses was that women who reported using of contraception are less likely to be never-married mothers. With regards to lifetime number of partners, we reject the null hypothesis in favour of the research hypothesis, where the higher the number of lifetime partners, the higher the probability of being a never-married mother.

5.4 Study limitations

5.4.1 Marital mobility

DHS data does not allow for studying marital mobility. As such, although this study is focused on non-marital fertility, which can occur amongst both never-married women and formerly-married women, who have not remarried. It is limited to never-married women, since it cannot be established whether formerly married women with children had their children during their marriage, or after they left their marriage. Nonetheless, never-married, widowed or divorced women are not a homogenous group, and thus, examining non-marital fertility without specifying whom the births occur to, will conceal the distinctions between births.

5.4.2 Cross-sectional data

The DHS data to be used is a cross-sectional survey, which can show relationships between variables, but cannot establish temporal precedence in terms of knowing precisely which came first the independent variable or the dependent variable.

5.4.3 Study context

The literature review is not yet rich enough, as a limited number of studies have been done on older never-married women's fertility in Southern Africa. Nonetheless, despite this limitation, this study is still useful in delineating the levels of never-married fertility in Namibia as well as identifying the factors associated with never-married women's fertility.

5.5 Conclusion

Using the 2006−2007 Namibian Demographic survey, this study aimed to identify the factors predisposing never-married women to have children in Namibia. One of the study hypotheses was that never-married women with less than secondary education are less likely to be never-married mothers. This hypothesis was not confirmed by the findings of this study. This study also hypothesised that never-married women from urban areas are more likely to be never-married mothers than never-married women from rural areas. The results of this study showed a higher probability of a birth among rural dwellers. For the behavioural variables, this study hypothesised that the higher the number of lifetime partners, the higher the probability of being a never-married mother, and never-married women who report ever using contraceptives are less

likely to be never-married mothers. It was indeed the case that the probability of a birth increased with the number of lifetime partners. However, the findings of this study did not support the contention of having used of contraception.

The question this study set to answer was: what factors predispose never-married women to have children in Namibia? Although there has been limited research on never-married women's fertility in Southern Africa, their fertility is increasing, given momentum by an increasing proportion of women who never marry, yet remain sexually active. Based on the literature reviewed, potential factors were categorised into the categories demographic, socioeconomic and behavioural. The demographic factors found to predispose never-married women to have children were the age of woman, number of household members, and place of residence. In terms of socioeconomic determinants, household wealth index, educational level, and ethno-linguistic group influenced never-married women's fertility, while religion and occupation were not statistically significant at the five percent level of significance. The three identified behavioural factors number of lifetime partners, age at sexual debut, and ever using contraceptives, were significant factors impacting on never-married women's fertility.

The results of this study show that never-married women's fertility is prevalent in Namibia. A high proportion of never-married women aged between 25−49, are having children outside of marriage, with 79% having had at least one live birth in their lifetime. Overall, the results of this study corroborate the expectation that older never-married women have children outside of marriage in Namibia, and fertility among never-married women is no longer negligible. As such, Namibia is indeed in line with other Southern African countries, which have shown an increase in never-married women's fertility. Despite that it is also becoming a normative pathway to childbearing, the findings of this study show that it may haunt Namibian society. The study findings show that programmes targeting never-married fertility must take into account the increasing risk of a birth, with increasing age as well as the effect of education, ethno-linguistic group, household wealth index, number of lifetime partners, age at sexual debut and contraceptive use on the risk of having a birth.

Never-married fertility is not synonymous to low socioeconomic status with some educated women rationally choosing to have children outside of marriage. However, it is overrepresented

among the poor and less educated women. This study underscores the role of the declining familial control of sexual relations in increasing exposure to never-married fertility, leading to a higher opportunity cost of time, as never-married mothers experience problems in arranging childcare and maintaining employment. Never-married fertility has serious implications for the women themselves, their children, their families, the community, and the Namibian society at large. Never-married women's fertility is an indication of unprotected sexual intercourse, which is particularly alarming in a context where the HIV/AIDS rate is one of the highest in the world, and where women are disproportionately affected (Sibanda and Mudhovozi, 2012).

The high rates of never-married women's fertility in Namibia echo changes in family formation behaviour. The study findings depict that never-married women's fertility arises from various demographic, socioeconomic and behavioural factors, that have to be taken into account to reduce negative implications that may result due to never-married women's fertility, and in some cases, the incidence of never-married women's fertility.

5.6 Recommendations

5.6.1 Programmatic recommendations

The study showed that in Namibia, women from poor households are more likely to be never-married mothers than women from rich households. This is an issue of concern that needs to be considered in order to alleviate poverty, as well as gender inequity and inequality in Namibia. One best practice that Namibia might consider is South Africa's child grant system, which is aimed at assisting poor single mothers. This welfare system acts as a safety net for single mothers, especially in cases where fathers are not involved with childcare activities (Kruger, 1998). Since less educated women in Namibia are more likely to experience a birth, there is need for policies focused on protecting never-married mothers from economic insecurities, such as welfare systems, while curtailing their dependence on welfare by investing in their education, especially beyond primary level, and creating employment opportunities for them. So far, the use of contraception has not had a large enough effect so as to allow never-married women to prevent non-marital fertility. Thus, there is need for programmes to improve efficacy in contraceptive use, and to help never-married women achieve control over their reproductive lives. However, the programmes ought to take into account ethnic differentials in premarital

sexuality and fertility. This is because never-married fertility is deeply ingrained in people's behaviours, and their context needs to be taken into account when implementing intervention strategies. Programmes to aid with dissemination of information on never-married fertility should be put in place in rural areas so as to bring to attention the high prevalence of never-married fertility in rural areas.

Policies and programmes addressing never-married women's fertility need to take into account that non-marital fertility is not teenage fertility, and that as women age, the risk of having children increases. As such, policies and programmes should not only aim to reduce never-married women's fertility, but also to help them take care of their children through welfare systems, as well as achieve their desired fertility. Intervention strategies for reducing never-married fertility should focus on increasing effective contraceptive use, and reducing the lifetime number of partners. This study showed that older never-married mothers are not necessarily in better circumstances to fend for themselves and their children. As such, in Namibia – since marriage in some cases has become irrelevant to childbearing, while having children is still culturally valued – there is need for each individual to calculate the benefits and costs of having children outside of marriage, as well as for programmes to help individuals to make informed choices.

5.6.2 Research implications

1. Based on the findings of this study, the effect of contraceptive use was counterintuitive, with never-married women who have experience using contraception being more likely to be never-married mothers than women who have never used contraception. As such, future research is needed on contraceptive use, both in terms of discontinuation and timing of use, so as to examine the effectiveness of contraceptive use in reducing never-married women's fertility, or in facilitating never-married women's achievement of their reproductive health desires.

2. There is need for qualitative future studies on non-marital fertility that illuminate the meanings people attach to reproduction and the factors associated with the wellbeing of never-married women's children, and non-marital fertility among men, especially with regards to paternal recognition.

CHAPTER 6:

POSTSCRIPT

6.0 Introduction to the chapter

This chapter aims to explain in detail the limitations of this research report; its conceptualisation, operationalisation and implementation, and why the results fall short of contributing to the broader research. The chapter also makes reference to the errors in the dataset and methodological flaws embodied in the models.

6.1 Conceptualisation

Examiner's comment: *The dissertation is a conceptual swamp. All women who say that they are or were married are excluded from the analysis as such the sample is massively biased. Perhaps some of those never-married women; married the fathers of those children or perhaps they had multiple children with multiple fathers, before getting married to a completely different person. Where is the distinction between never-married and non-marital fertility? The study would have been better off examining premarital fertility, rather than arguing that the analysis of non-marital fertility is an intellectually viable option.*

The question this study set to answer was, 'what factors predispose never-married women to have children in Namibia'. Never-married women's fertility is a subset of non-marital fertility. However, never-married fertility is restricted to premarital fertility, that is, "the proportion of births occurring prior to first marriage or to never-married women" (Garenne, 2008: p.4). Non-marital fertility can occur to both never-married women, formerly married women who have not remarried, and even some of the births to married women may have happened while they were not married. This study only focuses on never-married women, due to data limitations, as the Demographic and Health Survey (DHS) data used cannot classify whether the children born to currently married women, divorced, separated or widowed women were born before first marriage, during marriage or after divorce, or the death of a woman's husband. However, examining non-marital fertility without specifying whether births occur to never-married women,

currently married women, or widowed or divorced women, conceals the distinctions between births. Nonetheless, never-married, currently married, widowed or divorced women are not a homogenous group, thus examining non-marital fertility without specifying who the births occur to will conceal these distinctions.

This study may be be limited if it is not worthwhile to examine non-marital fertility amongst only never-married women, who form a subset of non-marital fertility, and whose fertility is strictly premarital. Never-married women may have non-marital births and they are an important group of women to examine, so as to know what sets the never-married women with children and those without children apart. The fertility behaviour of never-married women in their totality and not just adolescent fertility has rarely been considered, and is poorly understood in Southern Africa, even in the light of evidence that suggests the age at marriage is increasing along declining marriage levels; labour migration decreasingly impacts family formation behaviours and familial control of sexual relations. These factors make it inevitable that premarital fertility is becoming increasingly common.

Non-marital birth is an umbrella term that includes premarital births to never-married women, premarital births to currently-married women, births to widowed women and births to divorced women. This study examined premarital births to never-married women and coined the term 'never-married fertility', and the study was justified by the Namibian context, where the propensity towards marriage is decreasing. When you use the category 'premarital' to describe women who are not married, there is an implicit expectation of marriage later on contained in this language. But it is important to ask how this categorisation then accommodates that category of women who never marry later on. Nonetheless, the study examined premarital fertility amongst never-married women.

6.2 Operationalisation

Examiner's comments: *Why is the fertility of women who have never been married operationalised this way, interesting?*
Research asserts that never-married women are at risk of higher fertility, while the study results show lower fertility among never-married women relative to married women.

NB: PLEASE READ CHAPTER 6 IN LIEU OF THE RESULTS (POSTSCRIPT)

Contraception does not precede birth.

In answer to the first query, this study comes at an opportune time as studies on never-married women's childbearing have been sparse in Southern Africa. More studies have been done on non-marital fertility among adolescents, which is usually unwanted and unintended. These studies do not provide a holistic picture, as older, never-married women in other reproductive age groups may also have children outside of marriage. In a study on premarital childbearing in Namibia, at the time of pregnancy, a third of conceptions were wanted, a fifth were mistimed and 12 percent were not wanted at all. The same study contended that older women had a decreased risk of having either a mistimed or unwanted pregnancy. In America, the federal government recognised the significance of implications of never-married women's childbearing, and concluded that initiatives to address it that may be appropriate for teenagers and adolescent youths, may not be appropriate for older unmarried women (Research Report, p.8).

In response to the second comment, in Sub-Saharan Africa, premarital fertility defined as fertility before marriage increased from 3.8 percent in 1950 to 5.7 percent in 2000. The small increase masked substantial differences, as Southern African countries such as Namibia and Botswana experienced a 44 percent and 43 percent increase respectively, in the proportion of all births born to never-married women (Research Report, p.1). The increase in never-married fertility in the two latter countries makes this study interesting. The decreases in marriage lead to low marital fertility on one hand and on the other, high fertility among never-married women as the connection between marriage and fertility decreases (Research Report, p. 20). The statement above is based on the idea that in Southern Africa and Sub-Saharan Africa as a whole, traditionally a woman had to be married to have a child. However, if this phenomenon is changing, it means that women can now have children, both outside and in marriage as such leading to continued rapid population growth. The statement does not mean that never-married fertility is higher than marital fertility, but instead, it means that marital fertility is declining, while never-married fertility is increasing. In essence, as much as marriage is declining in Southern Africa, this does not mean that childbearing is also declining, as childbearing is no longer confined to marriage, and where we see instead new family formation behaviours.

The literature is diverse where, at one point, women who use contraception are more likely to have a birth, while at another point, women who are not using contraception are more likely to have a birth. Although the risk of having a birth is higher in urban areas, the opportunity costs of time are higher in urban areas, as these women experience problems in arranging child care and maintaining employment (Research report, p. 13). As such, one would expect women who report ever having used contraception to have a lower likelihood of having had a birth. However, never-married women may fail to properly use contraceptives or to negotiate their use, due to their financial dependency on men (Research Report, p.52). Conversely, it may be possible for women who report ever using contraception to have experienced a birth. Page 54 of the Research Report further explains that never-married women have been found to often delay contraceptive use until they had children, because in some instances, men promise to marry them if they prove that they are able to have children, and after that fail, to fulfil this promise. In a normal situation, indeed the experience of using contraception should have a large enough effect to assist never-married women to have control of their reproduction and avoid unwanted, unplanned and mistimed births.

Examiner's comments: *Childbearing in Namibia is no longer restricted to marriage and over half of the women in the reproductive ages 15-49 have never been married. The question posed is problematic: 'what predisposes never-married women to have children'? In a situation where never-married women having children is normal, the question is largely redundant.*

The study is relevant as there has been limited research on never-married women's childbearing in Southern Africa, particularly in Namibia. More research on the topic has been done in developed countries, particularly in the United States of America. A number of factors led to an increase in never-married women's childbearing in developed countries especially in America. Some of these factors were increased age at first marriage, which is associated with a high risk of having a non-marital birth, since women would be spending most of their reproductive lives unmarried or experiencing marital instability. Furthermore, there is a decrease in marriage levels brought about by adverse economic conditions. Southern African countries have been experiencing an increase in the proportion of never-married women, increased age at first marriage, where marital instability and adverse economic conditions where affordability of bride wealth, has been affected by the shift of payment from men's families in the form of cows, to

men bearing the sole cost (in monetary form). Never-married mothers may face myriad challenges in Africa, where the women generally bear custody of children. The research showed that never-married women have lower socioeconomic statuses, and their children are more likely to have poor educational and health outcomes. Consequently, there is a need to conduct researches that situates never-married women's fertility in its socioeconomic and cultural context, so as to improve the understanding of factors that affect their fertility in Namibia, and other similar settings.

6.3 Literature review

Examiner's comment: *The literature review does not show the requisite high-level synthesis and integration.*

The literature review for this study was based on studies that have been conducted the world over, with a focus on Southern Africa which is the region where Namibia is situated. To someone knowledgeable about demography and different social and political contexts in general it may be easy to acknowledge that migrant labour was one of the factors that created a set of social institutions where non-marital childbearing was normalised. However, since research should be able to explain in detail and put across, even to the broader readership, the relationship between migrant labour and non-marital fertility. The literature review attempted a critical account of what has been written on a topic by accredited scholars and researchers.

Examiner's comment: *Page 4; section 1.1 of the research report states that the average number of children has fallen. This statement is about the total fertility rate, not average number of children born to women aged 45−49 in the population (the population average parity).*

Total fertility rate is defined as the number of children a woman would have if she were to go through her childbearing years conforming to mortality rates of that time (MoHSS Namibia and Macro International Inc, 2008). According to the United Nations (2013) fertility report, total fertility refers to the average number of children a woman would bear if fertility rates remained unchanged during her lifetime. Such being the case, it appears appropriate to use total fertility rate interchangeably with average number of children in the way adopted in this study.

6.4 Methodology

This study was a secondary data analysis of the 2006/2007 Namibian Demographic and Health Survey (NDHS). The study concerned factors predisposing never-married women to have children, and research illustrated that factors such as age of woman, educational attainment, household wealth index, and place of residence, have a bearing on never-married women's fertility. These variables, amongst others generated from the dataset used, are not always presented in the form that is suitable for analysis, and thus were manipulated as data. Moreover, data manipulation was necessary, as the researcher did not have control over data entry or collection, since this was a secondary data analysis. The women's individual recode dataset was used, and it had a sample size of 9,804 units of analysis. The sample size diagramme depicted in this study started with 9,723 units of analysis, that is, all women, regardless of marital status. However, what was not specified was that this was now a manipulated sample size, where strange codes were removed. These codes were dropped as they denoted: missing data due to data collection issues; data entry errors; respondents giving wrong answers or not answering questions; and also because they fell outside the way in which the variables in the questionnaire were coded.

The variables used were coded based on those of other studies, and what was deemed necessary for the study. For example it was better to collapse the house hold index variable which initially was categorized as (poorest, poor, middle, rich and richest) into (poor, middle and rich) which are smaller categories necessary for analysis and this is how other studies using DHS data have manipulated the variable. The categories of the manipulated variable through recoding were collapsed into smaller categories, where (the poorest and poorer were merged to generate the category labelled as poor) and the (the richer and richest were merged to generate the category labelled as rich).

Language was used as a proxy for ethnicity. This was an interesting variable, and was used as a way of understanding never-married fertility in the cultural context of Namibia. In a number of studies referenced in this research report by Garenne Michel, the same methodology was adopted under the influence of an ethnographic atlas by Mudork (1967). As such, this study adopted the same methodology. Two never-married women who reported having 95 partners and above, were excluded from the analysis. This was erroneous, where these women were important for

analysis, since they might have been commercial sex workers. The lifetime number of partners' variable was treated as a continuous variable. The variable was supposed to be checked for linearity before being put in the model, as it might have been not evenly distributed, especially with the two women who had 95 partners, and also because other independent variables were categorical in nature. However, this study did not check for this. This could have confounded the results. Never-married women who reported that they had never had sex (93 units of analysis) were not excluded from the models, but they were not part of the age at first sex variable, as by definition, they had never had sex, but they were part of the rest of the variables. As such, the results are not monumentally biased, as they show the never-married women who have not been exposed to the risk of having a non-marital birth. Interaction effects were checked for, although these results were no put in the results section.

Model fit results

Number of observations	=	1,924
LR chi2 (25)	=	415.77
Prob > chi2	=	0.0000
Pseudo R2	=	0.2449
Log Likelihood	=	-641.05

The model fit results using weighted data, showed that when all the independent variables were included in the model, overall the test was statistically significant, with a likelihood ratio chi-squared statistic of 415.77 for 25 degrees of freedom, and a corresponding negligible p-value 0.000. The log likelihood value for the full model was -641.05. Changes in the log likelihood after removing a variable show how much the variable removed contributes to the fit of the model. When ethnicity was removed, the log likelihood value reduced to -671.30, showing that ethnicity was an important factor contributing to never-married fertility. In addition, education and lifetime number of partners became non-significant, when ethnicity was removed. When checking for interaction between ethnicity and education, it was not significant at the five percent level of significance. No interaction existed between ethnicity and lifetime number of partners, as it was not significant at the five percent level of significance.

NB: PLEASE READ CHAPTER 6 IN LIEU OF THE RESULTS (POSTSCRIPT)

The contribution of household wealth index to the fit of the model was small, but when it was removed from the model, the log likelihood only slightly decreased, while education became more significant. However, interaction was not significant between education and household wealth index. The effect of ethnicity and lifetime number of partners did not change notably with the removal of education, however, employment became marginally significant. When testing for interaction between education and employment, it was not present. The number of lifetime partners was the most important factor contributing to never-married fertility, as the log likelihood value decreased to -653.23 after its removal from the model. Religion was retained in the model as a potential predictor, even though it had no predictive power at the bivariate level and multivariate level. Even with the removal of variables from the model, it still remained not to be statistically significantly associated with never-married fertility at the five percent level of significance. When religion was removed from the model, the retained variables' direction of influence did not change.

The results from this research report should be interpreted in light of the flaws explained above, and most of all, with the understanding that the results are affected by causal issues (temporal precedence). The study was limited to never-married women aged between 25 and 49, and it examined the factors predisposing these women to having children. The probability that these women might have had their children at earlier ages cannot be disputed. The study used age at sexual debut to counter for this effect. However, the results still need to be interpreted while acknowledging that if the data was longitudinal in nature, where never-married women had their children within the age range 25 to 49, then the findings would not be impacted by causality issues. Since the data used was cross-sectional in nature, and had no information on the exact age at which the woman had a birth, then temporal precedence impacts immensely on the study findings. In addition, the place of residence variable also presents the same problem, because it is the current place of residence. The fact that a never-married woman reported to have been living in an urban area at the time of the survey, has no bearing on where she was living at the time of giving birth.

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