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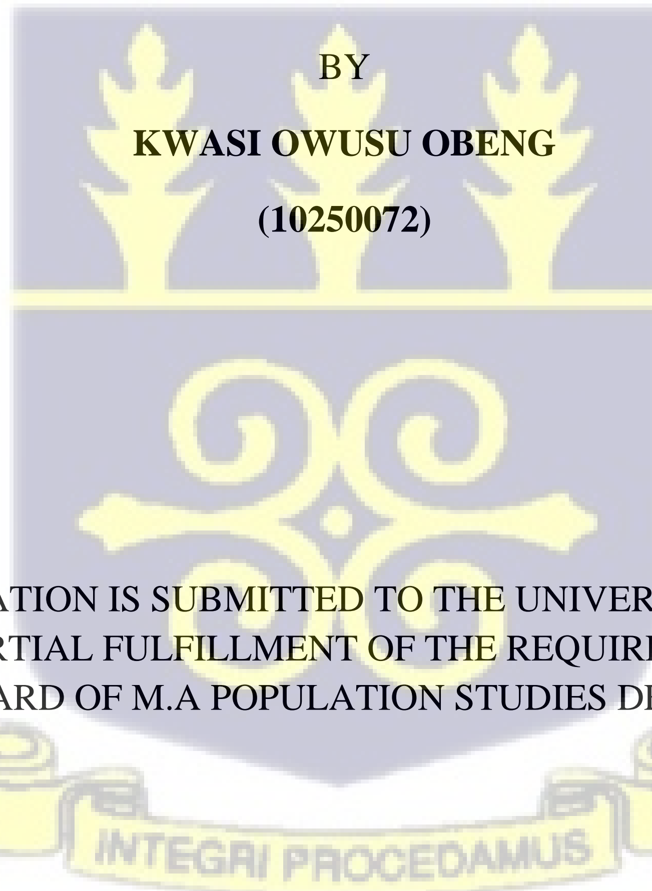
REGIONAL INSTITUTE FOR POPULATION STUDIES

UNIVERSITY OF GHANA, LEGON

WOMEN'S PARITY AND CONTRACEPTIVE USE IN GHANA



BY

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(10250072)

THIS DISSERTATION IS SUBMITTED TO THE UNIVERSITY OF GHANA, LEGON IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF M.A POPULATION STUDIES DEGREE

DECEMBER, 2021

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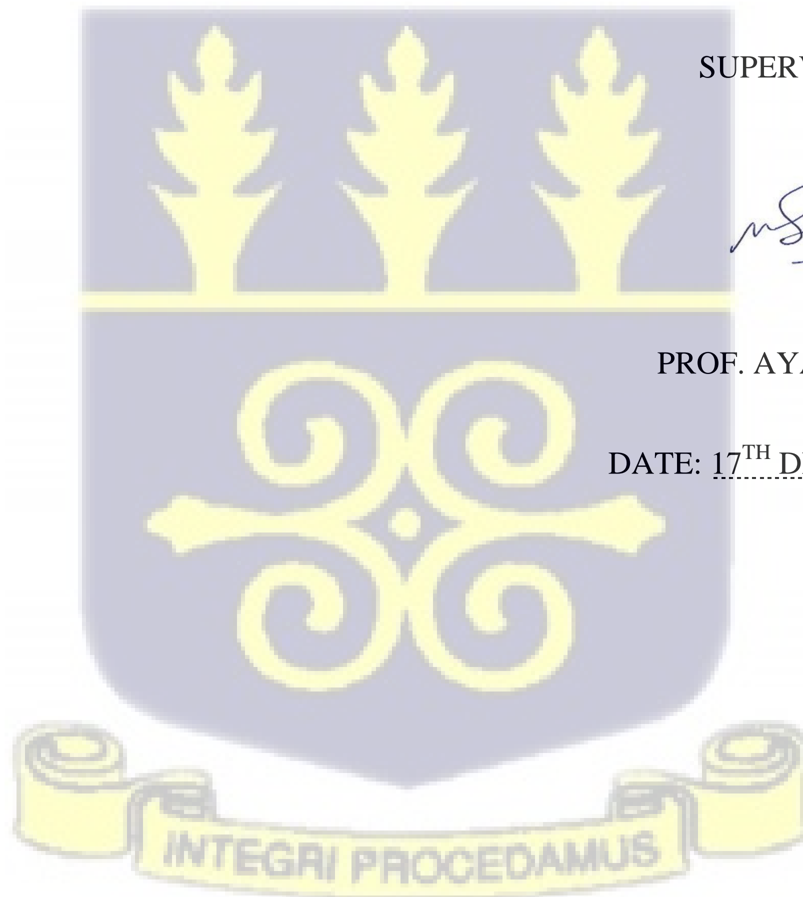
ACCEPTANCE

Accepted by the College of Humanities, University of Ghana, Legon in partial fulfillment of the requirements for the award of the degree of Master of Arts in Population Studies.



SUPERVISOR

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DATE: 17TH DECEMBER, 2021

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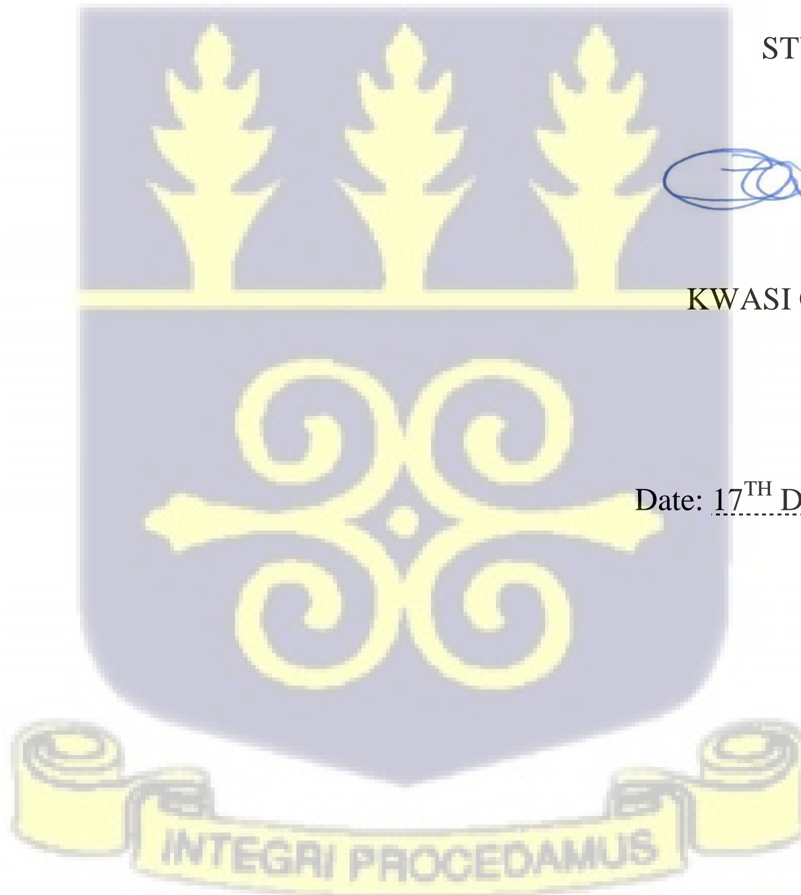
DECLARATION

I, Kwasi Owusu Obeng, hereby declare that except for the references made to other people's work which have been duly acknowledged, this is the result of my own research undertaken and under the supervision of the Regional Institute for Population Studies, University of Ghana and that neither a part nor the whole of it has been presented elsewhere for the award of another degree.



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DEDICATION

Firstly, I dedicate this dissertation to the Almighty God for His provisions, protection, and grace He gave me during the period of study. Secondly, it is dedicated to my wife Mary Aidoo, and Ama Benewaa Obeng my daughter for their sacrifice. Finally, this work is dedicated to my parents and siblings for their support.

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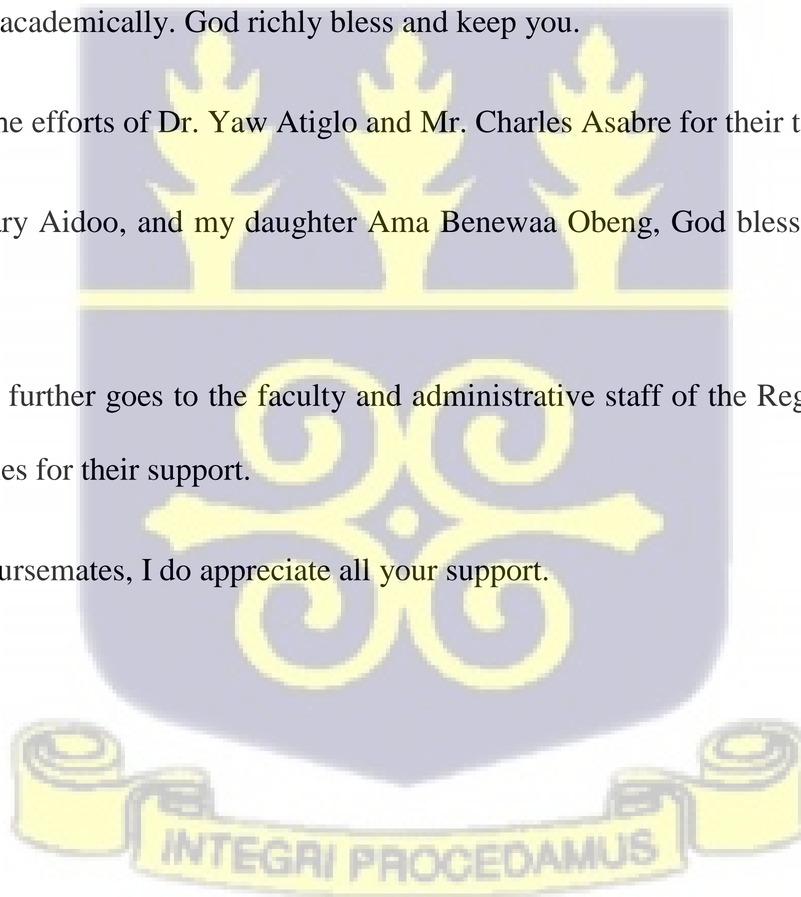
Finally to my coursemates, I do appreciate all your support.



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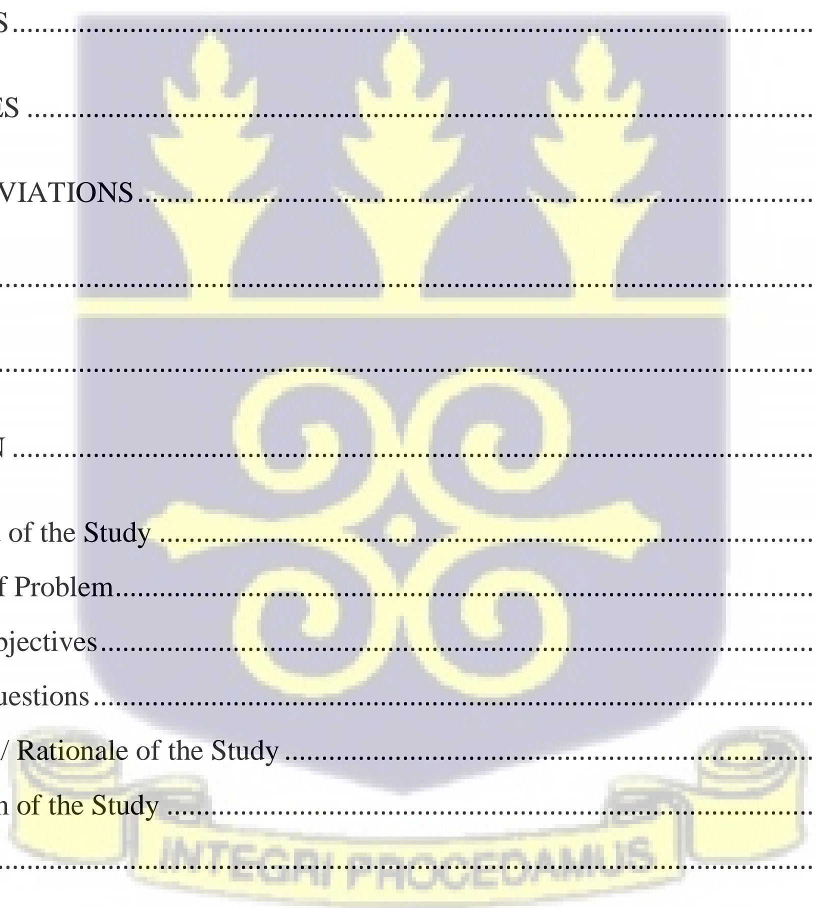

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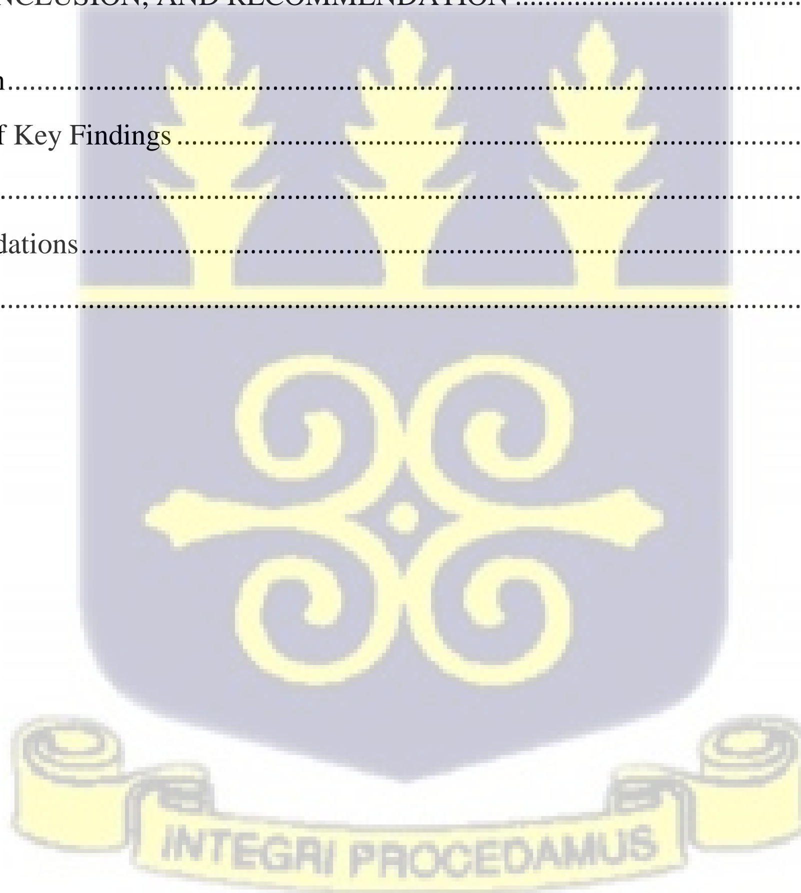

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LIST OF ABBREVIATIONS

CHPS: Community-based Health Planning and Services

CPR: Contraceptive Prevalence Rate

GDHS: Ghana Demographic and Health Survey

GSS: Ghana Statistical Service

JHS: Junior High School

JSS: Junior Secondary School

NPC: National Population Council

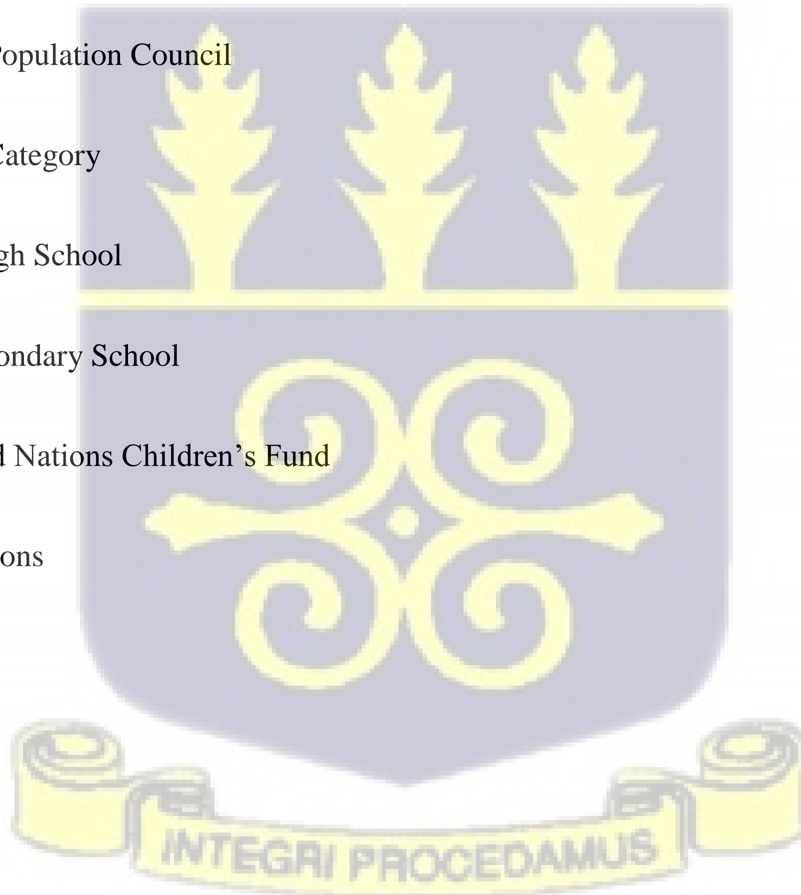
RC: Reference Category

SHS: Senior High School

SSS: Senior Secondary School

UNICEF: United Nations Children's Fund

UN: United Nations



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ABSTRACT

The use of contraceptives by women has increased globally from 42% in 1990 to 49% in 2019. However, the contraceptive prevalence rate remains low at 36% in Sub-Saharan Africa. In, Ghana, several interventions including the integration of family planning services into the National Health Insurance Scheme in certain selected districts, yet data from the recent Maternal Health Survey (2017), indicate about 25% of women were using contraceptives. The purpose of the study is to examine the relationship between women's parity level and contraceptive use in Ghana. The study used secondary data from the 2014 Ghana Demographic and Health Survey. Women who were pregnant, infecund, abstaining, and sexually inactive were excluded from this study, so the sample size was reduced from 9396 to 5227. Based on the women's dataset, the background description of the women's characteristics was presented at the univariate level of analysis whereas the relationship between individual characteristics, socio-economic factors, and parity and contraceptive use was examined at the bivariate and multivariate levels of analysis.

The results from the study indicated that 39.4% of the women had 2 to 4 children; while about 17% had 5 or more children. Moreover, the findings also revealed that 36% of the 5227 sampled women in Ghana were using contraceptives. Results from the bivariate level of the analysis indicated that the type of place of residence and household wealth index had no significant association with the use of contraceptives, while parity, age, marital status, education, ethnicity, religion, region of residence, and working status were significantly related to the use of contraceptives among women in Ghana. Also, about 27% of women with zero parity were using contraceptives while 38% of the women with parity five and above used contraceptives. At the multivariate level, results from the binary logistic regression model indicated that parity, age, education, ethnicity, marital status, and region of residence had a significant relationship with the

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use of contraceptives. Moreover, women with some children were more likely to be using contraceptives than women with zero parity.

This study makes recommendations on the education of women according to parity especially women with 5 or more children on contraceptive use. Moreover, efforts must be strengthened to increase contraceptive use across all age groups, especially adults (20 - 49), and across all education levels (especially among highly educated women).

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CHAPTER ONE

INTRODUCTION

1.0 Background of the Study

Women's parity as a demographic concept refers to the number of living children born to a woman (Population Reference Bureau, 2020). Parity may be one of the determining factors in contraceptive use, and this study will focus on investigating the relationship between parity and contraceptive use. The assumption is that high-parity women may have higher odds of using contraceptives compared to low-parity women. Globally, women in the developed countries have low levels of parity with the majority of them using contraceptives than Sub-Saharan Africa where parity is high but contraceptive use remains low. The world's fertility rate has declined from 3.5 in 1990 to 2.5 in 2019 and Sub-Saharan Africa's fertility rate of 4.6 remains the highest. This reduction may be due to the rise in the Contraceptive Prevalence Rate(CPR) from 42% in 1990 to 49% in 2019 globally (UN, 2019). Contraceptive use in developed regions like the Eastern and South-East Asia where CPR increased from 50.7% in 1990 to 60% in 2019 is higher than CPR in less developing regions like Sub-Saharan Africa where the contraceptive prevalence rate increased from 13.2% to 28.5% within same period. Sub-Saharan Africa's high fertility can be explained by the desire for large families in the sub-region (Bongaarts, 2020) Ghana is still faced with high fertility and low coverage of contraceptive usage despite several family planning-related policies and programmes to increase contraceptive use. Literature has identified certain socio-demographic determinants of contraceptive use which include educational status, marital status, wealth index, employment type, type of place of residence, religion, and the number of living children (parity) (Solanke, 2017). This research is therefore

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intended to investigate the correlation between parity and contraceptive use in Ghana.

In Ghana, women have an average parity of 5 children as they exit the reproductive age period (Ghana Statistical Service (GSS), 2014) which is high compared to the World Health Organisation standard of at most four children per woman. The desire for childbearing and when to give birth may also be determined by the number of children a woman has, and this may influence contraceptive use or not. That is, women with zero parity or who have just begun childbearing may be less likely to use contraceptives than women with five or more children. Ghana's Demographic Health Survey (2014) data again, indicates that, among currently married women with no living children, 73% desire to have a child soon compared to just 4% of women with six or more living children with the same fertility desire. It is therefore challenging for other women with six or more children to meet their desired fertility level by either limiting or spacing birth without contraceptive usage. These women with the desire to limit or space childbearing but do not use any contraceptive method have an unmet need for family planning. In Ghana, for every 10 married women, three of them wanted to either space or end childbearing but they were not using any method to achieve their desire. Unmet need for family planning affects birth planning as research has shown a positive association between unmet need and unintended pregnancies (Bishwajit et al., 2017). The 2014 GDHS has shown that 31% of births in the country were unplanned (24% mistimed birth and 7% unwanted births). Unplanned birth in the country may also be associated with birth order where a high proportion of births in the second and third orders were planned compared to the first and above fourth birth orders (GSS, 2014). The country, therefore, needs to design strategies to increase contraceptive use among these women to reduce unplanned birth and its challenges.

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Moreover, the Ghanaian woman's parity may be closely linked to her decision to either use contraceptives or not. The desire to use contraceptives may be influenced by the parity level of women (Babalola et al., 2015). From the 2014 GDHS, 26% of married women with parity zero had the intention of using contraceptives in the future compared to 36% of married women with parity one. Notably, 59.1% of women with more than four children did not have any intention of using contraceptives. Various studies have emphasised the impact of parity, with other socio-demographic variables like women's educational level, age at first birth, and the type of place of residence on contraceptive use. This research rather intends to study the impact of parity on contraceptive use among women in Ghana. The outcome of the study would inform policymakers and implementers of the need to focus attention on the link between parity and contraceptive usage to increase the use of contraceptives and reduce the unmet need for family planning.

As part of efforts to reduce the rapid population growth rate through fertility regulation, the government of Ghana in 1969 promulgated a Population Policy to guide the management of its population, which was reviewed in 1994 and further reviewed in 2014 (National Population Council, 2014). The Ghana National Family Planning Programme was also introduced to coordinate the implementation of the 1969 Population policy and the establishment of the National Population Council with the vision of ensuring a sustainable quality of life through effective population management. Currently, family planning services including contraceptives are covered under the National Health Insurance Scheme in nine Districts to ensure affordability (Archer et al., 2020). Other identified strategies being carried out to increase the proportion of women using contraceptives in the country include the provision of community-level family planning services through the Community-based Health Planning and Services (CHPS) concept,

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education programmes on family planning (Mohammed & Ullah, 2020), and community-based advocacy programmes targeting community influencers and local organisations to attract community support in promoting contraceptive use (Kols, 2008). Despite these interventions to increase the contraceptive prevalence rate, an assessment by Kwankye and Cofie shows minimal impact on fertility rate reduction (Kwankye & Cofie, 2015).

1.1 Statement of Problem

Contraceptive use among women has increased over time globally. However, Sub-Saharan Africa remains the region with the least proportion of women using contraceptives to space and end childbearing (UN, 2019). Ghana, for example, has a low contraceptive rate of 24.7% and a high fertility rate of 3.9 children per woman (Ghana Statistical Service, 2017). Meanwhile, contraceptive use increases among women with high parity compared to women with fewer children (Nonvignon & Novignon, 2014) as women with high parity may have achieved their preferred parity level and recognise the importance of using contraceptives to limit childbearing. Among women with parity zero, 20.5% used contraceptives compared to 24.6% of women with parity one and two. Again, 30.1% of women with three to four living children used contraceptives compared to 26.7% of women with parity five and above (Ghana Statistical Service, 2014). Meanwhile, low contraceptive use among women can lead to unplanned pregnancies which may result in unsafe abortion (Atakro et al., 2019). Low contraceptive use can also lead to the phenomenon of too many and too close births among women and such births are also associated with high child and maternal mortality whereas women with high parity and too close births are prone to maternal and child mortality (Sonneveldt et al., 2013). Meanwhile, an improvement in child health and survival is an indicator of a country's well-being and improved life expectancy (Mekonnen, 2011). Again, low or non-contraceptive use leading to high parity

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may cause spontaneous preterm birth as studies have established the association between high parity and spontaneous preterm birth among women (Koullali et al., 2020). Such births have developmental defects on the child, psychological and financial burden to the family and the state may also need to provide for the educational and psychosocial needs of such children(Behrman & Butler, 2007). An increase in contraceptive use is therefore of greater importance to every country to improve the health of women and children and further reduce the burden of families as it may guide them in realising their desired number of children.

Contraceptive use has increased globally as a result of efforts by various governments and Donor Partners. Globally, the contraceptive prevalence rate increased from 42% in 1990 to 49% in 2019. However, the contraceptive prevalence rate is far higher among developed countries than the developing countries. For example, in Eastern and South-Eastern Asia, the CPR increased from 50.7% in 1990 to 60% in 2019 but in Sub-Saharan Africa, the contraceptive prevalence rate increased from 13.2% in 1990 to 28.5% in 2019 (UN, 2018). This indicates that 6 out of 10 women of reproductive age use contraceptives in Eastern and South-Eastern Asia. This is not the case in Sub-Saharan Africa where for every 10 women of reproductive age, about 3 of them use contraceptives to either space or limit childbearing.

In Ghana, contraceptive use among women remains low at 24.7% (Ghana Statistical Service, 2017) with a high unmet need for family planning (30%). This means, about 1 out of 4 women in Ghana use any method of contraceptives to prevent unplanned pregnancy, while 3 out of 10 want to regulate their fertility but do not use any method. Though the use of contraceptives has increased slightly from 22.2% in 2014 to 24.7 in 2017, this is still low. Should the low usage persist in Ghana, women are more likely to experience unintended pregnancies and related issues

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such as unsafe abortion and maternal mortality which may affect the country's finances and the wellbeing of citizens.

As part of efforts to increase contraceptive use, several studies have been conducted by researchers to identify factors responsible for influencing contraceptive use among women and have come out with diverse findings on these factors in different regions globally. Studies done by various researchers have indicated the impact of sociodemographic factors such as educational level, religion, place of residence, wealth status, parity, and age on contraceptive usage across different regions of the world (Abdulai et al., 2020); (Alo et al, 2020; Apanga et al., 2015; Adjei et al, 2014). Most of these researchers concentrated on the general impact of socio-demographic, socio-cultural, and socio-economic factors on contraceptive use (Abdel-salem et al, 2020; Abdulai et al,2020; Nyarko, 2020). Few researchers narrowed their studies on the joint effect of parity and variables like marital status, social support, and pregnancy history on contraceptive use (Coll et al, 2019; Ghazalel et al, 2010; Solanke, 2018; Bakibinga et al 2016). Yet all these studies were not carried out in Ghana.

Moreover, the study conducted by Coll et al (2019), targeted the impact of parity and marital status on contraceptive use among adolescents in 73 Less Developed Countries (LDCs) including Ghana. The above study is limited in terms of coverage and generalisation. The study only focused on adolescents who constitute a proportion of women of reproductive age, and since data from different countries at different periods were used, the results cannot completely represent the case in Ghana. This study will rather investigate the correlation between parity and the use of contraceptives among women in Ghana using national representative data which can be used for the generalisation of the results.

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Again, upon extensive readings from the literature on the determinants of contraceptive use, no single comprehensive research has been conducted to examine the direct influence of parity on the use of contraceptives in Ghana to the best of my knowledge. The results of this study will therefore bridge the knowledge gap in the area of parity and contraceptive use and provide literature to serve as a guide for subsequent studies around parity and contraceptive use.

This study is therefore expected to provide further information to help increase contraceptive use in Ghana by concentrating on the relationship between parity and the use of contraceptives. A significant rise in contraceptive use in Ghana may directly reduce the fertility rate and further reduce child and maternal mortality, unplanned pregnancy, and the associated effects of unsafe abortion. An increase in contraceptive use may also help to reduce pregnancy complications and the incidence of spontaneous preterm births and its effects on child health, parents, and the state.

The outcome of the study will also contribute to the knowledge of the limited research into the relationship between parity and contraceptive use and further fill the literature gap on this subject in Ghana since no study has been done about it in the country.

1.2 Research Objectives

The main objective of this study is to assess the relationship between parity and contraceptive usage among women in Ghana.

Specifically, this study aims:

I. To examine the association between women's parity level and contraceptive usage in Ghana

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II. To examine where individual characteristics of women mediate parity and contraceptive use among women in Ghana

III. To ascertain whether other socio-economic factors influence contraceptive use among women in Ghana

1.3 Research Questions

I. Does women's parity level affect contraceptive use in Ghana?

II. What individual characteristics can mediate women's parity and contraceptive use?

III. Are there other factors influencing the use of contraceptives among women in Ghana?

1.4 Justification/ Rationale of the Study

Contraceptive use has been an important subject for improving the reproductive health of women and effective means of reducing the fertility rate of a country and further reducing its growth rate to ensure sustainable development through effective population management. An increase in contraceptive use may lead to a reduction in child and maternal deaths and also decrease unintended pregnancy and unsafe abortion. It is, therefore, needful to examine the variables which can influence contraceptive use in Ghana.

Researchers have therefore studied widely the factors influencing contraceptive use. Despite the numerous studies on the socio-demographic determinants of contraceptive use globally, less can be said about the influence of a woman's parity level on her contraceptive use. It is therefore timely and important to conduct such a study to examine the association between women's parity and contraceptive use. The results of this study will provide additional knowledge to the limited study on the influence of parity on contraceptive use globally.

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Again, the outcome of this study will contribute to knowledge especially on contraceptive use by providing evidence-based information regarding the relationship between parity and the use of contraceptives in Ghana. The evidence-based information may help persons and organisations working in the areas of public health, reproductive health, demography, and government in policymaking and advocacy based on empirical data.

Moreover, the result of this study is expected to fill the gap in the area of parity and contraceptive use in Ghana since no study has been done in the country with parity as the main independent variable influencing contraceptive use among women. The literature gap may make it difficult to ascertain the relationship between parity and the use of contraceptives in Ghana. This study may therefore guide future researchers on the influence of parity on contraceptive use in Ghana.

This study also examines the association between individual characteristics (age and marital status) and socio-economic factors (education, ethnicity, religion, place of residence, region, working status, and household wealth index) and contraceptive use among women in Ghana. Since several kinds of research have already been done to analyse the relationship between these factors and contraceptive use, the outcome of this study will be used to compare and contrast the findings of the previous studies.

1.5 Organisation of the Study

This study is divided into seven chapters. Chapter one includes the background of the study, the problem statement, the objectives of the study, the research questions, and the rationale for the study. Chapter two contains the literature review on the topic, the theoretical and conceptual framework, and the hypotheses. Chapter three covers the methodology which was used for

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conducting this study. The distribution of the women by their background and socio-economic characteristics and contraceptive use is described in chapter four. In chapter five, the relationship between the main predictor variable, control variables, and the outcome variable is established at the bivariate level of analysis. In chapter six, the researcher examines the extent of the association between the predictor variable, control variables, and the outcome variable. Chapter seven also centers on the summary, conclusion, and recommendations derived from the results.

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CHAPTER TWO

LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

2.0 Introduction

Any device or act whose purpose is to prevent pregnancy can be considered a contraceptive (Rakhi et al, 2011). The contraceptive is therefore used to guide against unplanned pregnancy and birth and their further health and socio-economic effects. Various attempts have been made by scholars to find out the factors responsible for determining the use of contraceptives among women. However, studies on the relationship between the number of living children of women and contraceptive use with parity as the main predictor variable are limited across related disciplines like population studies, demography, and public health. So far, findings from the literature indicate the joint effect of demographic, other socio-cultural, and socio-economic factors on contraceptive use. Abdulai and his team focused on the impact of demographic and socio-cultural factors on contraceptive use and established the impact of factors such as religious affiliation, level of education, and husband approval as the major significant determinants of contraceptive use (Abdulai et al., 2020). Other factors influencing contraceptive use include age, parity, marriage duration, and the income level of women(Abdel-salam et al., 2020). Researchers have not comprehensively investigated the impact of parity on contraceptive use with parity as the main independent variable predicting contraceptive use. This study will rather investigate this relationship to fill the literature gap. In this chapter, various kinds of literature on parity and other selected factors influencing contraceptive use will be reviewed. The theoretical and conceptual framework and hypotheses guiding this research will also be discussed.

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2.1 The Concept of Parity

Different definitions have been propounded on parity from different disciplines. Whereas the Population Reference Bureau defines parity as the number of births previously born alive to a woman, from the medical point of view, parity is the frequency of births to a woman with a gestation period of twenty-four weeks not taking into consideration live birth or stillbirth (Tidy 2021). The Demographic Health Survey Programme also measures parity by the number of living children born to a woman. At the national level, average parity is the indicator used to measure the parity level. And average parity is the mean number of children ever born alive per woman according to their age (US Census Bureau, 2019). Parity is further classified into four levels namely: nulliparity (parity zero), primiparity (parity one), multiparity (parity two to four), and grand multiparity (parity five and above) (Tidy, 2021). The levels of parity may have socio-demographic and health implications. For example, China realising the effects of its one-child policy introduced the two-child policy and now extended it to three children to ensure a positive balance in its population structure (Song & Zhang, 2017). Various studies have also indicated the impact of parity on pregnancy outcomes and complications among women. Research has shown that, while nulliparous pregnant women have a higher risk of experiencing spontaneous preterm birth at the later part of their gestation period, their colleagues with high parity also have a higher risk of spontaneous preterm birth at the early gestation stage (Koullali et al., 2020). In terms of pregnancy complications, nulliparous and multiparous women are both at risk. Nulliparous pregnant women in their late reproductive age are likely to face complications such as preeclampsia and multiparous women in their advanced age are also at risk of anemia and gestational diabetes mellitus (Luo et al., 2020). To minimise these risks, it is imperative for women to effectively use contraceptives to prevent high parity.

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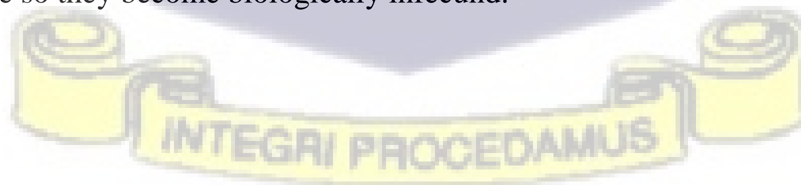
2.2 Women's Parity and Contraceptive Use

Women may take into consideration several factors including their parity levels before using contraceptives to space or limit childbearing. Depending on the number of children already born by a woman, she may choose to use contraceptives or not. Mostly, the rate of contraceptive use is low among nulliparous women (Ejembi et al., 2015) and this may be a result of the strong desire for childbearing among these women who are yet to begin their actual birth performance but the narration changes as they move to parity one and above. Contraceptive use among women varies with time and parity as women travel through their reproductive years. A high proportion of women begin to think of contraceptive use after first birth with the main aim of spacing and others who have achieved their desired number of children use contraceptives to limit or end childbearing (Frances et al., 2014). This helps to prevent unplanned and unwanted pregnancies. The desire and actual usage of contraceptives increases as women reach the multiparous stage as studies have established a correlation between high parity and contraceptive use (Anguzu et al., 2018), where these women are most likely to use permanent irreversible methods of contraception (Anita et al., 2020). These women, therefore, use contraceptives to limit childbearing because they may have reached their preferred number of children (Bawah et al., 2019) and others may have even exceeded their fertility preference. However, some women with high parity may not necessarily be using contraceptives because they may have reached the menopausal stage so they become biologically infecund.



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2.3 Individual and Socio-Economic Factors Influencing Parity and Contraceptive Use

2.3.1 Women's Age

An important demographic variable influencing the use of contraceptives is the age of the woman. There is an association between women's age and parity (Oppong et al., 2020) which can have a joint effect on contraceptive use. Women in their early reproductive age may have low parity and therefore decide to use contraceptives to delay pregnancy to focus on schooling or apprenticeship compared to women in their late reproductive age with high parity who may be using contraceptives to either space or end childbearing. This association between the age of women and parity and contraceptive use is in the form of a bell shape (Nonvignon & Novignon, 2014) where contraceptive use is low at the beginning of the reproductive age, and increases as women reach the middle part of this period because these women may be in marriage and experiencing an increase in parity and then, there is a decline in contraceptive use in the later part from 40 to 49 years (Gebre & Edossa, 2020).

Women within the later periods of their reproductive period are faced with a decline in fecundity and pregnancy complications (Balasch & Gratacós, 2011) and such complications may be partly associated with women who were advanced in age with high parity. High-parity women from age 35+ are therefore likely to use contraceptives to prevent such pregnancy complications. In addition to pregnancy complications, maternal mortality and morbidity are associated with adolescent pregnancy with over a 3.9million adolescents engaged in unsafe abortion globally (UNICEF, 2018) because the pregnancies were unplanned. Younger women, therefore, may also have a higher tendency to use contraceptives to prevent early pregnancy and its attendant effects.

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2.3.2 Marital Status

This study will be examining the association between a woman's marital status and contraceptive use. Some researchers have identified marital status as one of the social factors influencing contraceptive use, and their results indicated that the majority of married women were using contraceptives more than never-married ones (Beson et al., 2018); Achana et al., 2015). The relationship between a woman's marital status and parity may determine whether she will use contraceptives or not. Research has proven that parity is relatively high among married women than the never-married women (Majumder & Ram, 2015). These married women with high parity may therefore have a higher likelihood of using contraceptives to meet the couple's fertility desire. Women within the never-married category have low parity because most of them are young and may not be ready for childbearing coupled with societal norms against childbearing outside marriage. The sexually active never-married women with low parity, therefore, tend to use contraceptives to delay childbearing until marriage.

In Bongaarts's proximate determinants of fertility, marriage is included because married women are assumed to be more exposed to sexual activity than those outside the marriage unions (Bongaarts, 2015). It can therefore be deduced that since married women are more exposed to sexual activity, they are more likely to experience high parity, and to prevent unplanned pregnancy, they may use contraceptives for spacing or ending childbearing when necessary compared to the never-married women with low parity. But a study done to compare contraceptive use by marital status among women in Sub-Saharan Africa, Latin America, and the Caribbean showed that a higher proportion of never-married women from Sub-Saharan Africa tend to use contraceptives than married women compared to Latin America and the Caribbean (Wang et al., 2017). And among adolescents, a study conducted in Ghana has established that

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single adolescents tend to use contraceptives more than married adolescents (Appiah et al., 2020). This is possible in situations where sexually active never-married women with nulliparity or primiparity are more likely to be using contraceptives to prevent and delay pregnancy because childbearing outside marriage is frowned upon in most Sub-Saharan African communities.

2.3.3 Women's Education

Several studies have emphasised the influence of education on the fertility levels of women and contraceptive use. Generally, highly educated women tend to have low parity and use contraceptives more than women with a lower level of education (Aviisah et al., 2018). Studies have indicated that while women with primary education have 0% to 30% fewer children than their counterparts with no education, women with high education have 10% to 50% fewer children than women with primary education (Kim, 2016). The low parity associated with higher education on the part of women can partly be attributed to the longer period of schooling which delays marriage and childbearing. The association between parity and women's education may also influence contraceptive use to some extent. While highly educated women with low parity are more likely to be using contraceptives to meet their fertility preference and concentrate on schooling without interference by an unplanned pregnancy, the women who have no education with high parity are less likely to use contraceptives. Highly educated women with low parity are well informed on sexual and reproductive health issues, so they are therefore able to make decisions on when to use contraceptives and where to obtain them to meet their desired number of children because education is linked to positive health-seeking behaviour (Alo et al., 2020).

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2.3.4 Ethnicity

There are several ethnic groups in Ghana but the major ones are Akan, Mole-Dagbani, Ewe, Grusi, Guan, Mande, Ga/Dangbe, and Gurma (Ghana Statistical Service, 2010). However, all the other smaller ethnic groups have been put together under the other category. Ethnic groups have their cultural norms and values which may influence their behaviour. In Ghana, most of these ethnic groups see childbearing as means of perpetuating the family through child naming, social support from children, and social recognition from society (Kyei et al., 2021). Moreover, studies have established a relationship between ethnicity and the use of contraceptives in Ghana (Sarfo & Asiedu, 2014). Studies have further indicated that the Akan and Mole-Dagbani have a high desire for childbearing compared to the rest of the ethnic groups (Akonor & Biney, 2021). It is therefore not surprising when the study by Adjei and Billingsley indicated that the women from the Mole-Dagbani ethnic group have higher parity (Adjei & Billingsley, 2017). According to the study done by Appiah et al., (2020), Akan women were also more likely to use contraceptives than the rest of the ethnic groups (Appiah et al., 2020). It is possible that, though Akan women desire childbearing, they also recognise the effective role of contraceptives in regulating births and preventing unplanned pregnancies.

2.3.5 Type of Place of Residence

The world is becoming more urbanised as a larger proportion of the population now resides in cities. Depending on the residential location of a woman and the parity level, the tendency to use contraceptives will either be high or low. Studies have generally shown that rural women have high parity compared to urban women (Kulu, 2012) and as a result, the level of contraceptive use may differ among urban and rural women. Globally, urban women with low parity may have a high tendency to use contraceptives compared to rural women with high parity (Chintsanya,

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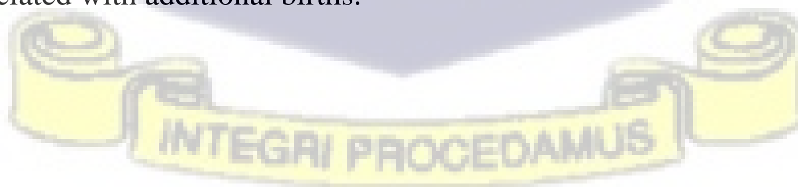
2013). In Sub-Saharan Africa, studies have further confirmed that urban women have high contraceptive usage than rural women (Apanga et al., 2020). Urban women with low parity have a higher likelihood of using contraceptives to limit childbearing to adequately meet the high cost of living in the city compared to rural women with high parity. Again, contraceptive use is high among urban women (Islam et al., 2020) because most women living in urban areas may be highly educated and so understand the need for contraceptives to reduce fertility to improve their reproductive health. Moreover, they may easily afford contraceptive services which are also largely available in the cities compared to their colleagues in the rural areas characterised by poverty, scarcity of contraceptives, and making it difficult to afford and access contraceptive services. However, in Ghana, results from the current Maternal Health Survey show that contraceptive use is increasing in rural areas than among urban women (Ghana Statistical Service, 2017). A current study conducted by Oppong and colleagues has rather shown no significant association between place of residence and the use of contraceptives (Oppong et al., 2021). The several interventions like the Community-based Health Planning and Services (CHPS) in rural communities may contribute to the increase in the use of contraceptives among rural women. Obviously, rural women with high parity may also experience the high cost of providing for the basic needs of their children and coupled with poverty in the rural areas. These women may now be more likely to use contraceptives to limit and space childbearing to reduce the burdens associated with additional births.



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2.3.6 Region of Residence

The level of contraceptive use differs across geographic locations at the sub-national level. In this study, regions are limited to the previous ten administrative regions and not the current sixteen regions because the source of data for this study (GDHSD 2014) was limited to ten regions as indicated in Figure 1. In Ghana, women in the northern part (Upper West, Northern, and Upper East regions) have high parity than women in the southern part (GSS, 2014). However, research has shown an improvement in contraceptive use, especially among the Upper West and Upper East regions (Sarfo & Asiedu, 2014). The outcome of the 2017 Maternal Survey also showed an increase in the use of contraceptives from 23.7% and 25.2% in 2014 to 32.4% and 32.6% in 2017 among women in the Upper East and Upper West respectively compared to the stalled rate of 28% in the Greater Accra region.

Figure 1: Map of Ghana Showing the Administrative Regions

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2.3.7 Religion

Religious affiliations influence contraceptive use based on different belief systems surrounding birth control. These major religions in Ghana include Christianity, Islam, and Traditional religions. The relationship between a woman's religion and parity may inform her contraceptive use. Studies have found that women within the Traditional and Islamic religions have higher parity compared to Christian women and among Christian women, parity is slightly higher among catholic women than other Christian women (Westoff & Bietsch, 2015). Women who are affiliated with the traditional religion with high parity are also less likely to use contraceptives as most of these people are pronatalists (Kwankye & Cofie, 2015) who support larger family sizes for reasons ranging from family perpetuation to social support. The Catholic Church forbids the use of modern methods and considers its usage as a sinful act, and only approves abstinence and rhythmic methods as birth control methods. Catholic women are therefore more likely to have high parity and less likely to use contraceptives than other Christian women without restrictions on contraceptive use (Nwogu et al., 2021). However, studies have shown that a significant proportion of women in the Catholic Church use modern contraceptives. Research has indicated that, in the United States, while only 2% of Catholic women were using the approved natural methods of birth control, 65% were rather using modern methods (Jones & Dreweke, 2011). In Sub-Saharan Africa, contraceptive use is high among Christian women compared to Muslims (Ahinkorah, 2020). In Ghana, religion has a significant association with contraceptive use, and Christian women have a high desire for contraceptive use than women from the Islamic and Traditional religions (Ahuja et al., 2020).

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2.3.8 Working Status

The relationship between women's parity and contraceptive use may be influenced by their working status. Working women may have low parity compared to non-working women (Obiyan et al., 2019) because they may spend most of their time in the workplace and want to reduce the burden of combining childcare and work issues. Other studies also revealed that parity was low among non-working women compared to working women (Nyarko, 2021). These non-working women may have low parity when they are faced with economic hardship and therefore decide to delay childbearing until they start working. The association between a woman's parity and working status also influences contraceptive use. Research has indicated that the working women were more likely to be using contraceptives than the non-working women in North-Western part of Nigeria (Unumeri et al., 2015). These women who are working may be able to afford family planning services compared to non-working women. These women with low parity may recognise the need to use contraceptives to limit childbearing to reduce the burden of managing work and family.

2.3.9 Household Wealth Quintile

The level of wealth or the economic status of an individual's household is associated with the woman's parity and this association can determine contraceptive use (Colleran & Snopkowski, 2018). Household wealth may indicate the financial background of women to determine if a respondent is either from a rich or poor household. Researchers have indicated that women from the poorest households may experience high parity while women from the richest households have low parity (Adebowale et al., 2014). It is therefore obvious that the women with low parity in the richest households are more likely to use contraceptives compared to women from the poorest households with high parity. Most researchers have found that contraceptive use

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increases with an increase in household wealth or income (Osmani et al., 2015) in Afghanistan, (Salami, 2016) in Nigeria, and (Nketiah et al., 2012) in Ghana. However, a study conducted in Ghana and another in Rwanda proved otherwise, as contraceptive use was significantly associated with women from poor households compared to those in rich households (Ameyaw et al., 2017). This change may indicate that poor women in rural communities are taking advantage of various family planning interventions to make contraceptives available and affordable for them. In Ghana, such interventions include the expansion of CHPS in rural communities and the inclusion of family planning services in selected districts. In the case of Rwanda, contraceptive use has significantly increased among poor women in rural communities compared to the level of contraceptive use among rich women as a result of government investment in community-level programmes on family planning (Muhoza & Ruhara, 2019). This change may result from the fact that most of these poor women with high parity are more likely to be using contraceptives because family planning services have been brought closer to them at a lower cost.

2.4 Theoretical Framework

The most widely used theory to determine contraceptive use is the 'Theory of Planned Behaviour (TPB) propounded by Icek Azjen in 1985 which emerged from the Theory of Reasoned Action (Ajzen, 1985). The Theory of Reasoned Action posits that human actions are informed by intentions through thoughtful processes based on available information on the effects of the actions. However, the theory of planned behaviour is based on perceived behavioural control, human attitudes, and subjective norms. The theory further assumes that other background factors may indirectly moderate human intentions and actual performance of behaviour (Ajzen, 2011). These factors include the demographic and socio-economic variables that can determine human

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behaviour. This theory is therefore modified to indicate the influence of parity, individual characteristics, and socio-economic factors on the use of contraceptives.

From the assumptions behind the Theory of Planned Behaviour (TPB), this study posits that women's intentions to space or limit childbearing by using contraceptives may be influenced by the number of living children these women have. For example, women with five or more children have a higher likelihood to use contraceptives to limit childbearing compared to women with no children. This study, therefore, predicts that parity may have an impact on the use of contraceptives among women in Ghana. However, other background factors aside from parity may also influence contraceptive use. These factors may include individual characteristics like age and marital status. For example, married women with zero parity may be less likely to use contraceptives compared with non-married women with zero parity because the married woman may be expecting childbirth while the non-married may want to avoid pregnancy outside marriage. Moreover, other socio-economic variables like education, ethnicity, religion, working status, region, type of place of residence, and household wealth may also influence contraceptive use among women. For instance, poor women may be less likely to use contraceptives which may also lead to an increase in their parity level (Tessema et al., 2021).

Guided by the Theory of Planned Behaviour, this study will examine the influence of the main independent variable (parity) on contraceptive use and further assess how the individual and socio-economic factors mediate the relationship between parity and contraceptive use.

2.5 Conceptual Framework

The conceptual framework of this study is based on Ajzen's Theory of Planned Behaviour (TPB) to explain the influence of parity (main independent variable) on contraceptive use among

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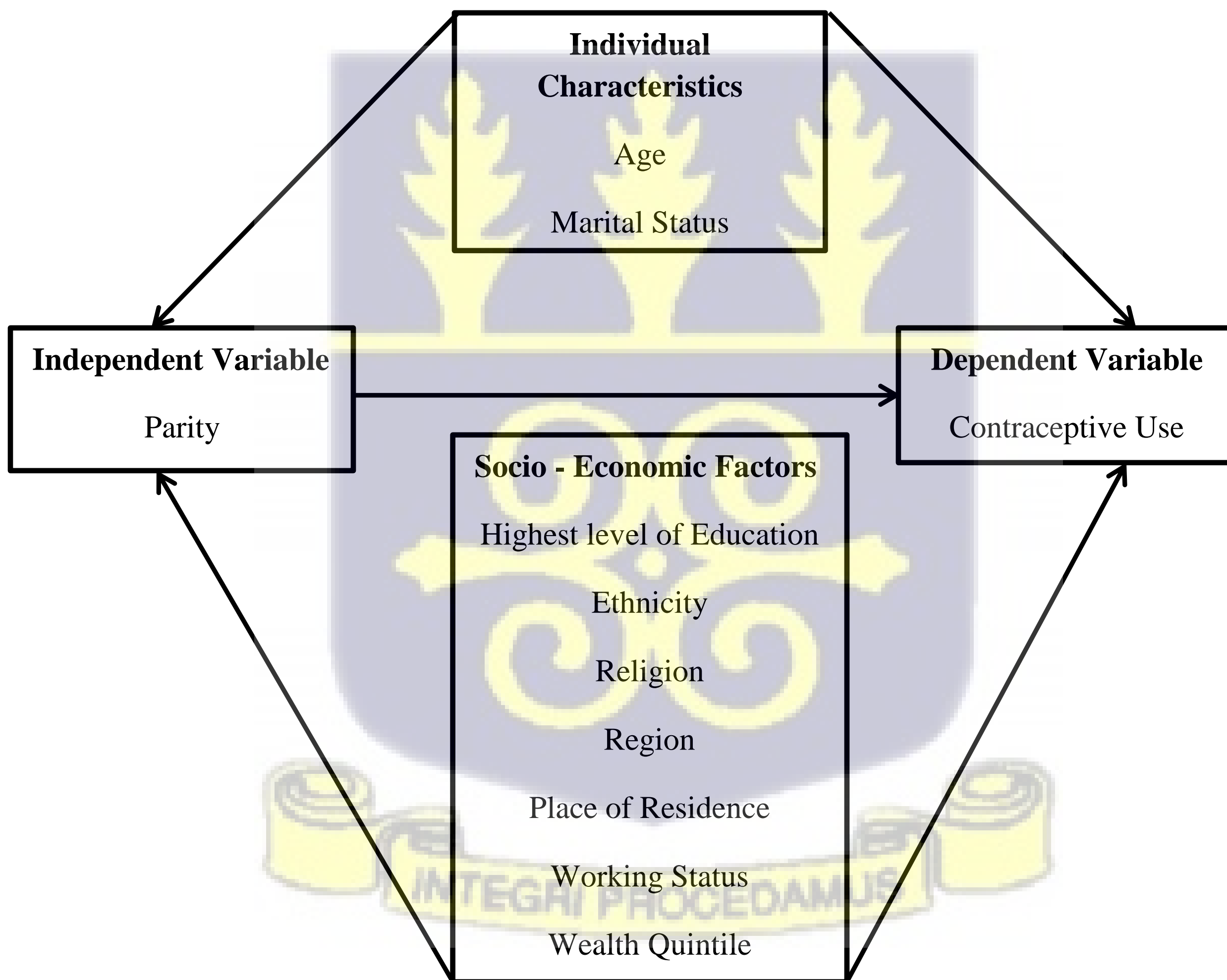
women. The study further took into consideration the effects of control variables on the parity level of women and the use of contraceptives. The control variables are grouped into individual characteristics and socio-economic factors among the women. The individual characteristics are age and marital status. The socioeconomic variables also include ethnicity, religion, region of residence, place of residence, wealth status, working status, and education. The association between parity, control variables (individual characteristics and socio-economic factors), and contraceptive use is represented in Figure 2 below:

Figure 2: A Conceptual Framework on Women's Parity and Contraceptive Use in Ghana



Source: ***Author's construct adapted from Ajzen's Theory of Planned Behaviour (1985)***

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Though a reverse causality exists between women's parity level and contraceptive use where contraceptive use may influence the parity level of women and vice versa, in this study, the focus is on the impact of parity on contraceptive use. Since the purpose of contraceptives is to control births, women with high parity may be using contraceptives to regulate their fertility while zero parity women may have a lower likelihood to use contraceptives since they may need to bear children.

The study seeks to examine the influence of parity on the use of contraceptives among women of reproductive age in Ghana. Firstly, the framework shows a direct relationship between the number of children born to a woman and her contraceptive use. It is expected that contraceptive use among women with no children will be low compared to women with five or more children (Ejembi et al., 2015). However, this relationship may not be direct as the usage of contraceptives by women no matter their level of parity may to a larger extent depend on several variables including individual characteristics (marital status and age) and socio-economic variables (education, ethnicity, religion, place of residence, region, working status, and household wealth).

The relationship between the control variables and the main independent variable (parity) and the dependent variable (contraceptive use) is also examined in this study.

A woman's age may also influence her parity and contraceptive use and the woman's age is also linked to her parity level. Young women may have fewer children because most of them may probably not be married and concentrate on education and apprenticeship compared to adults where a high proportion of them may already be married and have begun childbearing. Contraceptive use may increase among sexually active young women because they may want to prevent pregnancy before marriage and concentrate on education or apprenticeship. As young

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women progress into adulthood and enter into marriage, their level of using contraceptives reduces because they may want to have children and only uses contraceptives for spacing. However, contraceptive use may increase among women in the later part of their reproductive period to stop childbearing as they may be reaching menopause (Nonvignon & Nonvignon, 2014).

Marital status may also have an association with contraceptive use and women's parity. From the conceptual framework, it can be observed that married women may have high parity than never-married because married women are frequently exposed to sexual activities compared to never-married women. Again, because married women are so exposed to sexual activities, they may have a higher tendency of using contraceptives to space or end childbearing (Wang et al., 2017). Moreover, one's marital status may also influence her parity level. Researchers have proven that married women are more likely to have high parity than women who are not in a marital union (Majumder & Ram, 2015). This is possible because women in marital unions are highly exposed to pregnancy and childbearing compared to women who are not married.

Furthermore, the level of education of women may also influence the association between their parity and contraceptive use. Women with at least secondary education may be associated with low parity and high contraceptive use because they may have been well informed on reproductive health issues including contraceptive use than women with no or low level of education who may not be well informed concerning contraception (Alo et al., 2020). Again, there exists an association between women's level of education and parity. Research has established that women with higher education may have fewer children because of their long stay in school and their understanding of the advantages of the smaller family size to their personal and family development (Kim, 2016).

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A woman's ethnic affiliation may also influence the relationship between her parity level and contraceptive use. Women from a pronatalist ethnic group like the Akans and Mole-Dagbani are more likely to have high parity than the rest of the ethnic groups in Ghana. Again, such women from the pronatalist background may have a lower tendency to use contraceptives due to their cultural beliefs and norms that inform their behaviour on fertility.

Moreover, a relationship exists between religion and women's parity and contraceptive use. Women in religious denominations like the Catholic Church which is against the use of modern contraceptives may be more likely to have high parity and less likely to use contraceptives than Pentecostal and Charismatic women (Westoff & Bietsch, 2015). In addition, women from the Islamic religion are also more likely to have high parity and less likely to use contraceptives due to their belief that children are provided by God and no one must stop the plan of God (Farrell et al., 2014) compared to Christian women.

The place of residence may also have an association with a woman's parity level and contraceptive use. Research has indicated that high parity is associated with women in rural communities compared to urban women (Kulu, 2012). Again, due to the problem of availability and affordability, rural women are less likely to use contraceptives (Apanga et al., 2020) compared to urban women who have family planning services widely available to them and who can easily afford them.

At the sub-national level, women in regions that are characterised by urbanisation and improved standard of living may have low parity and high contraceptive use compared to regions that are predominantly rural and poor. Data from the 2014 GDHS indicate high parity among the regions in the northern part of Ghana. However, these regions were also characterised by low

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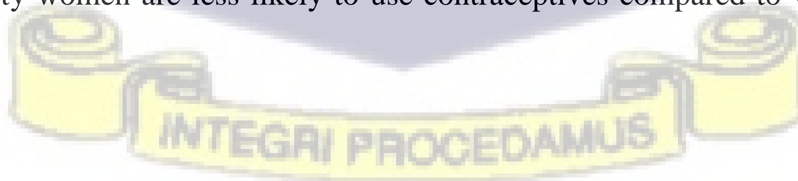
contraceptive use compared to the women in the southern part of the country (Ghana Statistical Service, 2014).

The influence of parity on contraceptive use may also depend on the working status of women. Women who are working are less likely to have high parity (Obiyan et al., 2019). While working women may have low parity with a higher likelihood of using contraceptives, non-working women on the other hand may have a low tendency of using contraceptives. The non-working women probably have financial difficulties to afford family planning services compared to working women.

Last but not least, the level of household wealth may be associated with women's parity and contraceptive use. Women from poor households generally have high parity compared to women from the richest households (Adebowale et al., 2014). Women from poor households may to some extent not be able to afford contraceptives to regulate childbearing and this may result in low contraceptive use among them. These women from poor households are therefore more likely to have high parity and less likely to use contraceptives than women from rich households (Salami, 2016).

2.6 Hypotheses

1. There is an association between women's parity level and contraceptive use.
2. Zero parity women are less likely to use contraceptives compared to women with some children.



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CHAPTER THREE

METHODOLOGY

3.0 Introduction

Chapter three consists of the study design, data source, sample size, and sampling technique used in this study. The variables are also clearly indicated with their appropriate categorisations for measurement purposes. In addition, the method of statistical analysis is also indicated at the univariate, bivariate, and multivariate levels to describe the variables and explain the relationship between the variables. The limitations of the method used in carrying out this research are also found in this chapter.

3.1 Study Design

This study is based on a cross-sectional survey (2014 Ghana Demographic and Health Survey) which was used to gather quantitative data from respondents during a specific period between September and December 2014 to inform policymaking.

3.2 Data Source

The study used secondary data obtained from Ghana's 2014 Demographic and Health Survey (GDHS) by Ghana Statistical Service and the Ghana Health Service with financial support from the International Finance Corporation (IFC). Ghana started conducting demographic and health surveys in 1988 and the 2014 GDHS is the sixth round of the survey which is conducted every five years. The GDHS dataset is based on three separate questionnaires namely; Household Questionnaire, Man's Questionnaire, and Woman's Questionnaire. However, this study is purely based on the woman's questionnaire which includes women from 15-49 who constitute women

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of reproductive age in the country. The women's questionnaire is chosen because it is the only dataset among the three that can help get the needed data to achieve the objective of examining the relationship between women's parity and the use of contraceptives in Ghana. Through the women's questionnaire, data on age, marital status, contraceptive use, and the number of living children were obtained. Other socio-economic characteristics of women such as religious affiliation, education, ethnicity, region of residence, employment status, place of residence, and other information related to women's reproductive health were collected. This study however limited itself to only the variables relevant to the objectives of the study.

3.3 Sampling Technique

The 2010 population and housing census updated sampling frame was used for the 2014 GDHS and a two-stage sample design was used to select the respondents for the survey. Firstly, clusters which are made of enumeration areas were selected from all the then ten regions in the country followed by the selection of eligible households with women 15 - 49 who were permanent residents or visiting women in the same age category who were in the household a night before the exercise. In all, 427 clusters were selected nationwide with 211in rural areas and 216 in urban settings, and 30 households were randomly selected from each cluster.

3.4 Sample Size

Though the 2014 GDHS was conducted among 9396 women, however, in this study, 5227 women were eligible after excluding women who were pregnant, sexually inactive, currently abstaining from sex, and infecund because these women do not need contraceptives for pregnancy prevention since they do not have any chance of getting pregnant.

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3.5 Variables in the Study

3.5.1 Dependent Variable: Contraceptive Use

In this study, the current use of any contraceptive method was measured as a dichotomous variable with 'Yes or No' categories. This response can be obtained from the question: Are you currently doing something or using any method to delay or avoid getting pregnant? However, in this study, the response from respondents on the current contraceptive method use was recategorised. All respondents who indicated they were not using any method were put under the 'No' category and respondents who reported using any method were also put under the 'Yes' category. 'Yes' responses were coded as 1 and 'No' were coded as 0.

3.5.2 Independent Variable

Women's parity is measured by the number of living children provided by women during the 2014 GDHS. These responses have been recategorised as 0, 1, 2 – 4, and 5+. This indicates that women with five or more living children have been put together under the 5+ category. Women's parity levels were coded as follows: 0=1, 1= 2, 2-4= 3 and 5+= 4.

3.5.3 Control Variables

The study also controlled for the effects of other variables which may also influence parity and contraceptive use among women in Ghana. These variables are grouped under individual characteristics and socio-economic variables. The individual characteristics include women's age and marital status. The socio-economic variables also consist of women's highest education, ethnicity, religion, place of residence, region of residence (the previous ten regions in Ghana were used in this study), working status, and wealth quintile. The control variables are discussed below:

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Age: The age of women in this study was categorised into the seven conventional age groups (15 -19, 20 – 24, 25 – 29, 30 – 34, 35 – 39, 40 – 44, 45 - 49)

Current Marital Status: The current marital status of women in the study was recategorised into married, living with a partner, and not married. This was coded as 1, 2, and 3 respectively. All women who were not in a marital union, widowed, separated/ no longer living together, and divorced during the survey were put together under the not married category.

Highest Level of Education: This variable sort to know the level of education attained by respondents. This was categorised into no education, primary, Middle/JSS/JHS, and Secondary/SSS/SHS/Higher education. These categories were also coded as 0, 1, 2, and 3 respectively.

Ethnicity: This study includes women from the eight major ethnic groups in the country. These include are Akan, Ga/Dangbe, Ewe, Guan, Mole-Dagbani, Grusi, Gurma, and Mande. Except for the major ethnic groups, all the minor ethnic groups are put under the 'other' category. These ethnic groups have been coded as 1, 2,3,4,5,6,7,8, and 9 respectively.

Religion: The religious affiliation of women was also recategorised into Catholic (coded 1), Orthodox (coded 2), Pentecostal/Charismatic (coded 3), Other Christians (coded 4), Islam (coded 5), Traditionalists/Spiritualists (coded 6) and No religion (coded 7). Women from the Anglican, Presbyterian, and Methodist Church were put together to form the Orthodox category.

Type of Place of Residence: The type of place of residence was categorised into urban (coded as 1) and rural (coded as 2).

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Region of Residence: The regions included the ten administrative regions namely: Greater Accra (coded 1), Central (coded 2), Western (coded 3), Volta (coded 4), Eastern (coded 5), Ashanti (coded 6), Brong Ahafo (coded 7), Northern (coded 8), Upper East (coded 9), and Upper West (code 10).

Working Status: This variable helps to know the working and non-working women during the survey. The responses were categorised as yes or no (indicating a working and not working respectively). These responses have been recategorised as employed and unemployed in this study. All women who were working were coded as 1 and the non-working women were coded as 2.

Wealth Quintile: The household wealth index of women was measured in the following categories: poorest (coded 1), poorer (coded 2), middle (coded 3), richer (coded 4), and richest (coded 5).

3.6 Methods of Data Analysis

The dataset was analysed using the Statistical Package for Social Sciences (SPSS) software (version 26) at three different stages. The three stages of analysis conducted include univariate, bivariate, and multivariate levels of analysis. The result of each level of analysis was generated through the SPSS for further interpretation.

3.6.1 Univariate Analysis

At the univariate level, descriptive tabulations of each of the variables were presented to provide a background description of the characteristics of women involved in the study. The results obtained from the SPSS output were presented in frequency and percentage tables to describe the distribution of various variables in the study.

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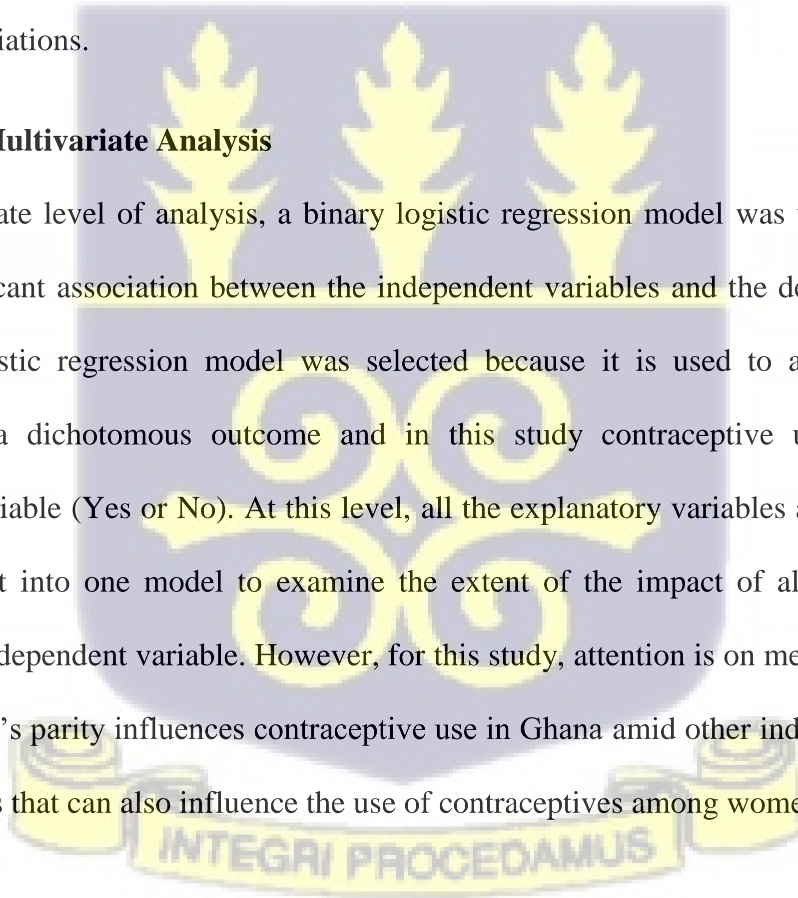
3.6.2 Bivariate Analysis

At the second level of analysis, Pearson's chi-square test was ran to examine if there exists a significant relationship between the main independent variable (parity), individual characteristics (age and marital status), socio-economic variables (education, ethnicity, religion, place of residence, region, working status, and wealth quintile), and the dependent variable (contraceptive use) at the bivariate level of analysis. The chi-square model was chosen because it helps to test association among categorical variables and all the variables in this study are in categories. The association between the main independent variable, individual characteristics, socio-economic variables, and the dependent variable was tested at a confidence interval of 95% to determine significant associations.

3.6.3 Multivariate Analysis



At the multivariate level of analysis, a binary logistic regression model was used to assess the extent of significant association between the independent variables and the dependent variable. The binary logistic regression model was selected because it is used to analyse dependent variables with a dichotomous outcome and in this study contraceptive use is used as a dichotomous variable (Yes or No). At this level, all the explanatory variables and the dependent variables are put into one model to examine the extent of the impact of all the independent variables on the dependent variable. However, for this study, attention is on measuring the extent to which women's parity influences contraceptive use in Ghana amid other individual and socio-economic factors that can also influence the use of contraceptives among women in Ghana.

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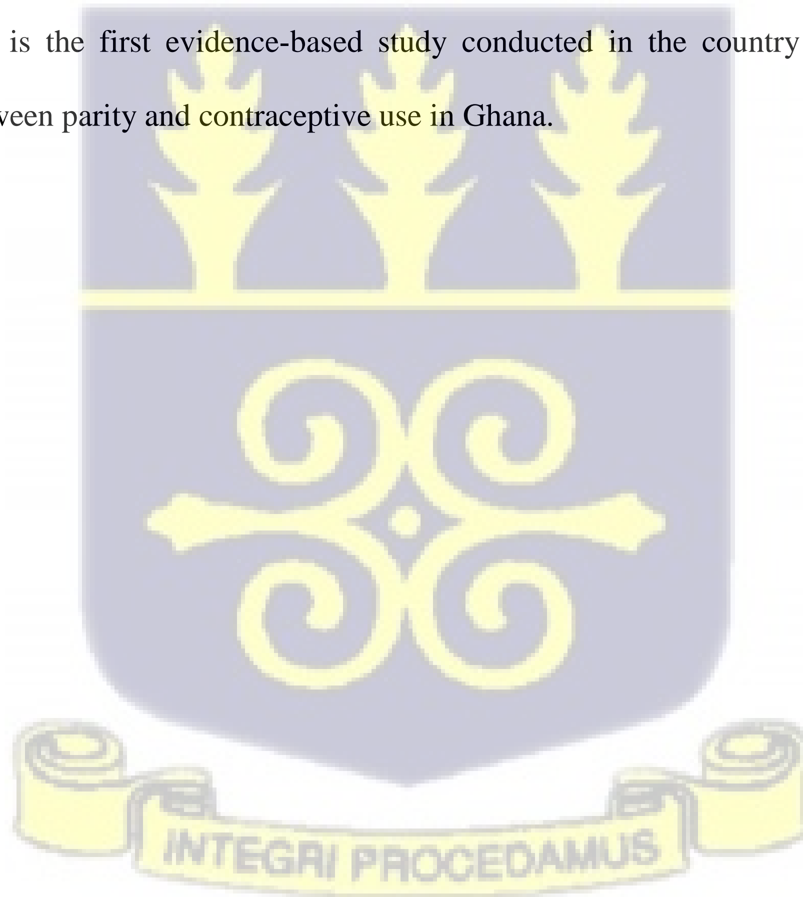
3.7 Limitations of the Study

The 2014 GDHS used a cross-sectional approach in obtaining the data in this survey which can only help to establish and assess the association between parity and contraceptive use among women in Ghana. This research approach does not establish a causal relationship among variables and therefore makes it difficult to predict the impact of parity on contraceptive use among women in Ghana. Moreover, this study did not consider other relevant variables like fertility desire and intention to use contraceptives to determine if a woman's fertility desire was linked to contraceptive use and further examine the influence of women's intentions to use contraceptives on the relationship between parity and contraceptive use. However, despite these limitations, this is the first evidence-based study conducted in the country to determine the relationship between parity and contraceptive use in Ghana.



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CHAPTER FOUR

BACKGROUND CHARACTERISTICS OF RESPONDENTS

4.0 Introduction

This chapter focuses on describing the variables used in this study which includes the main dependent variable and the dependent variable (parity and contraceptive use respectively), demographic or individual characteristics (marital status and age), and the socio-economic variables (education, ethnicity, place of residence, region, religion, working status, and wealth quintile). Appropriate percentage and frequency distribution tables were therefore used for describing the various variables at the univariate level of analysis.

4.1 Independent and Dependent Variables

4.1.1 Parity

The number of children born to a woman may influence contraceptive use. Women with no children are nulliparous, women with one child are referred to as primiparous, and women with two to four children are multiparous women while women with children from five and above are the grand multiparous women. From Table 4.1 below, 39.4% of the respondents were multiparous and the primiparous women had the smallest proportion of 15.6% of the study sample.

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Table 4. 1: Percentage Distribution of Women by Parity

Parity	Frequency	Percent
0	1455	27.8
1	815	15.6
2 – 4	2060	39.4
5+	897	17.2
Total	**5227**	**100.0**

Source: Computed from 2014 GDHS Dataset

4.1.2 Contraceptive Use

Contraceptives are used to prevent unplanned and unwanted pregnancies and their associated health and financial burden. Women's current contraceptive usage is measured as a dichotomous categorical variable with 'Yes' or 'No' options. The outcome from the univariate analysis from Table 4.2 indicates that 36% of the 5227 women who were eligible in this study were using any contraceptive method while 64% were not using contraceptives.

Table 4. 2: Percentage Distribution of Women by Contraceptive Use

Contraceptive Use	Frequency	Percent
Yes	1882	36.0
No	3345	64.0
Total	**5227**	**100**

Source: Computed from the 2014 GDHS Dataset

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4.2. Individual Characteristics of Respondents

4.2.1 Woman's Age

In this study, the age of women was categorised into the seven conventional age groups. About 20% of the women were within the age group 25 – 29, while the women within 45 - 49 constituted the smallest proportion of 6.7%.

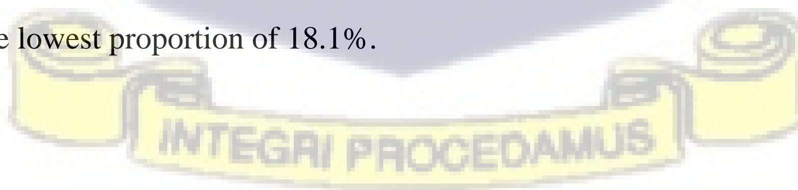
4.2.2 Current Marital Status

A woman's marital status is also another important demographic factor closely linked to contraceptive use. In Ghana, a significant proportion of childbirth happens among women who may not be legally married but living together as married and such women may also be using contraceptives. The marital status was therefore categorised into: married, living together, or cohabiting, and not married. The output from Table 4.3 indicates that the majority of respondents (47.8%) were currently married compared to the least proportion of 14.3% who were cohabiting during the survey.

4.3 Socio-Economic Factors

4.3.1 Women's Educational Attainment

The level of education of a woman may influence contraceptive use. Women's educational attainment is measured by the highest level of education of respondents. From Table 4.3, women with Middle/JHS/JSS education had the highest proportion of 36.9%, and women with primary education had the lowest proportion of 18.1%.



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4.3.2 Ethnicity

The culture of people is defined by the ethnic group they belong and these belief systems may influence certain reproductive behaviours including the use of contraceptives. From Table 4.3, most of the women were Akans representing 43.6% while women from the Mande ethnic group were the minority representing just 1.2% of the respondents. The Akan is the dominant ethnic group in the country as they are mainly made up of five regions (Central, Western, Eastern, Ashanti, and Brong Ahafo).

4.3.3 Religion

People's belief systems and values on contraceptive use are shaped by the religious group they find themselves. Depending on the doctrines of such religious groups on contraceptives, may influence its members on the acceptance and usage of contraceptives. The respondents were from five religious groups and some were not affiliated with any religion in the country. From Table 4.3, 37.5% of the women who form the highest proportion were from the Pentecostal/Charismatic religious group while the religious group with the least representation was the Traditional/Spiritual religion with 2.1% of the sampled women.

4.3.4 Type of Place of Residence

A woman's place of residence to some extent influences contraceptive use. Place of residence operationally refers to whether a respondent was residing in an urban or rural area. The Ghana Statistical Service has categorised all areas with a population of five thousand and above as urban and settlements with a population below five thousand considered as rural. Table 4.3 indicates a slight difference in the proportion of women from the urban and rural areas. Urban women constituted 50.6%, the rural women also constituted 49.4% of the respondents in this study.

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4.3.5 Region of Residence

Ghana currently has sixteen administrative regions but the region of residence of a woman in this study refers to the previous ten administrative regions of Ghana not including the newly created six regions. The result from Table 4.3 below shows that women of reproductive age from the Western region constituted the highest proportion of 12.0% while women from the Upper West region constituted the least proportion of 7.1%.

4.3.6 Working Status

The association between parity and the use of contraceptives among women may be influenced by the working status of the woman. The study, therefore, included both working and non-working women during the survey. Table 4.3 shows that the majority of the women were working where about 8 out of 10 of the respondents were working, whereas only 22.5% were non-working women.

4.3.7 Household Wealth Quintile

The wealth status of a woman's household is another variable being considered in this study. The household quintile is categorised under the poorest, poorer, middle, richer and richest. From Table 4.3, women from the poorest household constitute the highest proportion of 21.7% among the respondents. Meanwhile, the women from the richest and poorer households were the least represented in this study with a proportion of 18.7%.

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Table 4. 3: Percentage Distribution of Women by Individual Characteristics and Socio-Economic Factors

Variable	Frequency	Percentage
Individual Characteristics		
Age		
15-19	562	10.8
20-24	1003	19.2
25-29	1049	20.1
30-34	866	16.6
35-39	800	15.3
40-44	599	11.5
45-49	348	6.7
Marital Status		
Married	2501	47.8
Living Together/ Cohabiting	750	14.3
Not Married	1976	37.8
Socio-Economic Factors		
Highest level of Education		
No Education	1151	22.0
Primary Education	947	18.1
Middle/JSS/JHS	1927	36.9
Secondary/SHS/SSS/Higher	1202	23.0
Ethnicity		
Akan	2278	43.6
Ga/Dangbe	317	6.1
Ewe	658	12.6
Guan	134	2.6
Mole-Dagbani	1132	21.7
Grusi	244	4.7
Gurma	311	5.9
Mande	64	1.2
Other	89	1.7
Religion		
Catholic	740	14.2
Orthodox	674	12.9
Pentecostal/ Charismatic	1958	37.5
Other Christians	732	14.0
Islam	872	16.7
Traditionalists/Spiritualists	111	2.1
No Religion	140	2.7

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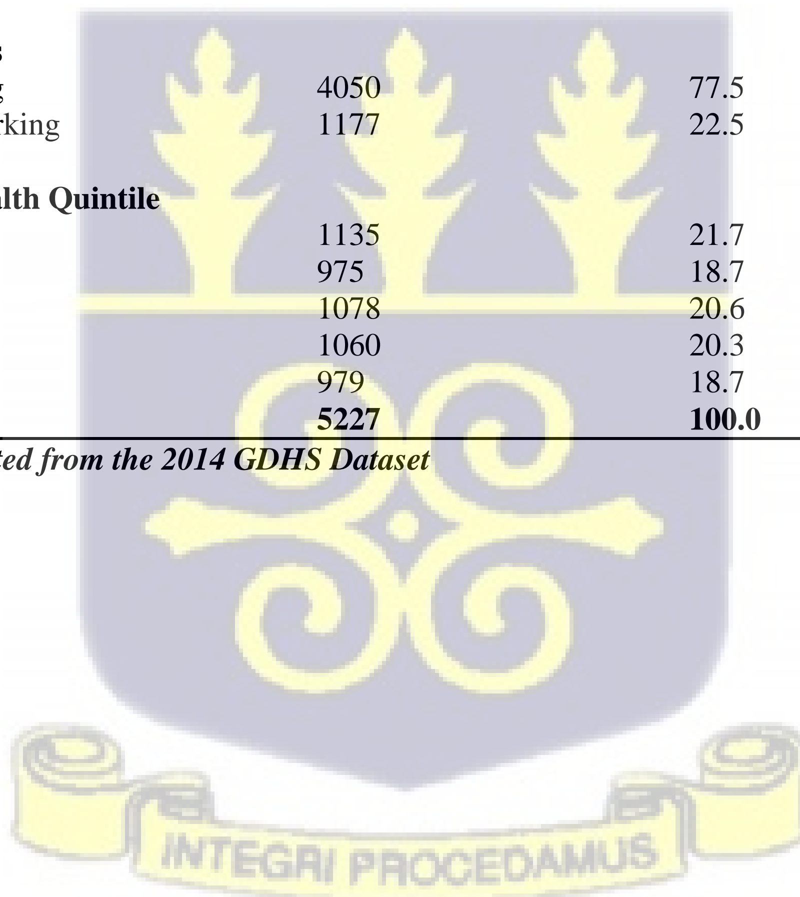
Variable	Frequency	Percentage
Type of Place of Residence		
Urban	2654	50.6
Rural	2582	49.4
Region		
Greater Accra	592	11.3
Central	538	10.3
Western	627	12.0
Volta	444	8.5
Eastern	539	10.3
Ashanti	591	11.3
Brong Ahafo	588	11.2
Northern	466	8.9
Upper East	472	9.0
Upper West	370	7.1
Working Status		
Working	4050	77.5
Not Working	1177	22.5
Household Wealth Quintile		
Poorest	1135	21.7
Poorer	975	18.7
Middle	1078	20.6
Richer	1060	20.3
Richest	979	18.7
Total	**5227**	**100.0**

Source: Computed from the 2014 GDHS Dataset



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CHAPTER FIVE

RELATIONSHIP BETWEEN PARITY, INDIVIDUAL CHARACTERISTICS, SOCIO-ECONOMIC FACTORS, AND CONTRACEPTIVE USE

5.0 Introduction

This chapter focuses on the relationship between the independent, control, and dependent variables at the bivariate level of analysis. The association between these variables was analysed at a significant level of 95% using the Chi-Square test to know variables that had a significant relationship with the use of contraceptives among women in Ghana. Such a relationship between the main independent variable (parity), individual characteristics (age and marital status), socio-economic factors (highest education level, ethnicity, religion, place of residence, region, working status, and household wealth), and contraceptive use were examined in this chapter. At this level, except for the type of place of residence and household wealth index, all other predictor variables were significantly associated with the use of contraceptives.

5.1 Parity and Contraceptive Use

At the bivariate level of analysis, women's parity was significantly associated with contraceptive use at a p-value <0.001. At this level, contraceptive use was high among multiparous women as a high proportion of 40.9% of them used contraceptives followed by 38.1% of grand multiparous women using contraceptives. Meanwhile, contraceptive use was low among nulliparous women as 27.3% of them were using contraceptives. This result is consistent with the results by Frances

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et al.,(2014); Ejembi et al.,(2015); Anguzu et al.,(2018) who indicated a significant relationship between parity and the use of contraceptives.

Table 5. 1: Percentage of Women by Parity and Contraceptive Use

	Contraceptive Use %		Total
	Yes	**No**	**Number of Women**
Parity			
0	27.3	72.7	1455
1	36.8	63.2	815
2 – 4	40.9	59.1	2060
5+	38.1	61.9	897
Total	**36.0**	**64.0**	**5227**
X^2= 71.614	**df = 3**		**P-value < 0.001**

Source: Computed from 2014 GDHS Dataset

5.2 Women's Age and Contraceptive Use

From the results at the bivariate level, age was significantly related to the use of contraceptives at a p-value of 0.001. From the results in Table 5.2 below, contraceptive use was high among women within the age group 20-24 with 40.8% of them using contraceptives. This was followed by women within 25-29 years where 39.3% of them used contraceptives. There was low contraceptive use among adolescents (15-19) as 24.9% of them used contraceptives in Ghana. The results from the chi-square test indicate that contraceptive use increases with age and reduces as women approach menopause. This result is consistent with the findings of the study conducted by Novignon & Novignon, (2014); Oppong et al., (2020); Gebre & Edossa, (2020) which also showed an association between women's age and the use of contraceptives.

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Table 5. 2 : Percentage of Women by Age and Contraceptive Use

	Contraceptive Use %		Total
	Yes	**No**	**Number of Women**
Age			
15 – 19	24.9	75.1	562
20 – 24	40.8	59.2	1003
25 – 29	39.3	60.7	1049
30 – 34	37.1	62.9	866
35 – 39	34.5	65.5	800
40 – 44	35.9	64.1	599
45 – 49	31.3	68.7	348
Total	**36.0**	**64.0**	**5227**
$X^2 = 49.330$	df = 6		P-value < 0.001

Source: Computed from 2014 GDHS Dataset

5.3 Marital Status and Contraceptive Use

The results from the chi-square test indicate that the current marital status of women was significantly associated with their contraceptive use at a p-value of less than 0.001. The use of contraceptives among married women was slightly higher than among cohabiting partners in Ghana. While 39.1% of married women used contraceptives, 36.7% of cohabiting women were also using contraceptives. The unmarried women were the least to use contraceptives as 31.4% of them were using contraceptives. Contraceptive use was therefore high among women in a union than among women not in a union. The bivariate result is consistent with the outcome of

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the research done by Achana et al. (2015); Beson et al., (2018) who established a significant relationship between marital status and contraceptive use.

Table 5. 3 : Percentage of Women by Marital Status and Contraceptive Use

	Contraceptive Use %		**Total**
	Yes	**No**	**Number of Women**
Marital Status			
Married	39.4	60.6	2501
Living Together/ Cohabiting	36.7	63.3	750
Not Married	31.4	68.6	1976
Total	**36.0**	**64.0**	**5227**
X^2 = 30.805	**df = 2**		**P-value < 0.001**

Source: Computed from 2014 GDHS Dataset

5.4 Highest Level of Education and Contraceptive Use

Women's educational level was significantly associated with their contraceptive use based on the p-value of 0.001 from the results of the chi-square test below. It can also be realised that contraceptive use was high among women with secondary/higher levels of education as 38.3% of them were using contraceptives. This was followed by 37.7% of women with Middle/ JHS/JSS education using contraceptives. However, women with no education were the least to use contraceptives as 31.2% of them were using contraceptives. Contraceptive use, therefore, increases with an increase in a woman's level of education. The result is consistent with the outcome of the research by Aviisah et al., (2018) where education was found to be significantly associated with contraceptive use.

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Table 5. 4 : Percentage of Women by Highest Level of Education and Contraceptive Use

	Contraceptive Use %		Total
	Yes	**No**	**Number of Women**
Highest Level of Education			
No Education	31.2	68.8	1151
Primary	35.5	64.5	947
Middle/ JHS/JSS	37.7	62.3	1927
Secondary/SSS/SHS/Higher	38.3	61.7	1202
Total	**36.0**	**64.0**	**5227**
X^2 = 16.848	**df = 3**		**P-value = 0.001**

Source: Computed from 2014 GDHS Dataset

5.5 Ethnicity and Contraceptive Use

Women's ethnic affiliation was significantly related to contraceptive use at a p-value of less than 0.001. From the chi-square results in Table 5.5, contraceptive use was high among Grusi women with 46.7% of them using contraceptives and followed by 39.1% of Akan women using contraceptives. However, Gurma women were the least to use contraceptives as a low proportion of 24.8% of them were using contraceptives. This result is consistent with the findings by Sarfo & Asiedu (2014) where ethnicity was significantly associated with contraceptive use.

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Table 5. 5 : Percentage of Women by Ethnicity and Contraceptive Use

	Contraceptive Use %		Total
	Yes	**No**	**Number of Women**
Ethnic Group			
Akan	39.1	60.9	2278
Ga/Dangbe	33.1	66.9	317
Ewe	35.6	64.4	658
Guan	34.3	65.7	134
Mole-Dagbani	32.6	67.4	1132
Grusi	46.7	53.3	244
Gurma	24.8	75.2	311
Mande	31.3	68.7	64
Other	29.2	70.8	89
Total	**36.0**	**64.0**	**5227**
X^2= 48.261	**df = 8**		**P-value < 0.001**

Source: Computed from 2014 GDHS Dataset

5.6 Religion and Contraceptive Use

Religious groups have different doctrines on reproductive health issues including contraceptive use and this may influence the use of contraceptives by women affiliated with religious bodies. At the bivariate level of analysis, religion was significantly related to contraceptive use at a p-value of 0.001. Contraceptive use was high among women from other Christian groups as about 4 out of 10 women in this religious group used contraceptives. This is closely followed by Catholic women with 38.5% of them using contraceptives. Women who were affiliated with the

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Traditional religion were the least to use contraceptives as about 20% were using contraceptives. The result is consistent with the findings by Ahinkorah (2020); and Nketiah et al., (2012) who found that religion was significantly associated with contraceptive use.

Table 5. 6 : Percentage of Women by Religion and Contraceptive Use

	Contraceptive Use %		**Total**
	Yes	**No**	**Number of Women**
Religion			
Catholic	38.5	61.5	740
Orthodox	36.9	63.1	674
Pentecostal/ Charismatic	37.1	62.9	1958
Other Christians	39.2	60.8	732
Islam	30.6	69.4	872
Traditionalists/ Spiritualists	19.8	80.2	111
No Religion	32.9	67.1	140
Total	**36.0**	**64.0**	**5227**
X^2 = 30.716	**df = 6**		**P-value < 0.001**

Source: Computed from 2014 GDHS Dataset

5.7 Type of Place of Residence and Contraceptive Use

Contraceptive use may be influenced by the place of residence of women. But at the bivariate level, a woman's type of place of residence was not significantly related to contraceptive use at a p-value of 0.055. However, the results from the cross-tabulation indicate contraceptive use was slightly high among rural women compared to urban women. The results indicated that 37.3% of rural women were using contraceptives compared to 34.7% of urban women using

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contraceptives. This finding is consistent with the findings of Nyarko, (2020) where it was found that a woman's place of residence had no association with her contraceptive use. This result however contradicts the findings by Salifu, (2020) where the type of place of residence was found to be significantly associated with contraceptive use. This disparity may be explained by the different datasets and periods the surveys were conducted. While Nyarko used the 2014 GDHS dataset, Salifu's study was based on the 2017 Maternal Health Survey and this may probably provide different results.

Table 5. 7: Percentage of Women by Place of Residence and Contraceptive Use

	Contraceptive Use %		**Total**
	Yes	**No**	**Number of Women**
Place of Residence			
Urban	34.7	65.3	2645
Rural	37.3	62.7	2582
Total	**36.0**	**64.0**	**5227**
X^2 = 3.693	**df = 1**		**P-value = 0.055**

Source: Computed from 2014 GDHS Dataset

5.8 Region of Residence and Contraceptive Use

Women's region of residence may also influence their contraceptive use in Ghana. From the chi-square test, there was a significant association between the region of residence and contraceptive use among the sampled women in Ghana at a p-value of 0.001. The proportion of women using contraceptives in Ghana was high among women from the Brong Ahafo region than women in other regions with 44.4% of them using contraceptives. Women from the Western region

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followed with 40.4% of the using contraceptives. Women from the Northern region were the least to use contraceptives with 19.5% using contraceptives.

Table 5. 8: Percentage of Women by Region and Contraceptive Use

	Contraceptive Use %		Total
	Yes	**No**	**Number of Women**
Region			
Greater Accra	34.8	65.2	592
Central	38.3	61.7	538
Western	40.4	59.6	627
Volta	38.5	61.5	444
Eastern	33.4	66.6	539
Ashanti	34.9	65.1	591
Brong Ahafo	44.4	55.6	588
Northern	19.5	80.5	466
Upper East	35.0	65.0	472
Upper West	38.6	61.4	370
Total	**36.0**	**64.0**	**5227**
X^2= 84.065		**df = 9**	**P-value < 0.001**

Source: Computed from 2014 GDHS Dataset

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5.9 Working Status and Contraceptive Use

The use of contraceptives among women may be determined by their working status. The chi-square result in the study showed a significant association between women's working status and the use of contraceptives at a p-value of 0.016. The result further indicates that women who were working used contraceptives more than non-working women in Ghana. While 36.9% of working women used contraceptives, about 33% of non-working women were using contraceptives. This result is consistent with the finding of the study by Unimeri et al., (2015) where the working status of women had a significant relationship with their contraceptive use.

Table 5. 9: Percentage of Women by Working Status and Contraceptive Use

	Contraceptive Use %		**Total**
	Yes	**No**	**Number of Women**
Working Status			
Working	36.9	75.4	4050
Not Working	33.1	84.2	1177
Total	**36.0**	**64.0**	**5227**
X^2 = 5.758	**df = 1**		**P-value = 0.016**

Source: Computed from 2014 GDHS Dataset

5.10 Household Wealth Quintile and Contraceptive Use

There was no significant association between the household wealth quintile and contraceptive use at a p-value of 0.186. However, the result from the cross-tabulation indicates that contraceptive use was slightly high among women from richer households than women from poorer households. Whereas 37.6% of women from richer households used contraceptives, 37.3% from poorer households also use contraceptives. Meanwhile, women from the poorest

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households had the least proportion of 33% using contraceptives. This result contradicts the findings from the studies done by Nketiah et al., (2012); Osmani et al., (2015); Salami, (2016); Ameyaw et al., (2017) in Ghana, and Muhoza & Ruhara,(2019) in Rwanda where there was a significant relationship between the household wealth of women and contraceptive use. The results below show a slight difference between the women from poor and richer households using contraceptives. The household wealth, therefore, does not determine contraceptive use among women at this level of analysis possibly because the poor may now be able to afford contraceptives.

Table 5. 10: Percentage of Women by Wealth Quintile and Contraceptive Use

	Contraceptive Use %		Total
	Yes	**No**	**Number of Women**
Household Wealth Quintile			
Poorest	33.0	67.0	1135
Poorer	37.3	62.7	975
Middle	36.5	63.5	1078
Richer	37.5	62.5	1060
Richest	36.0	64.0	979
Total	**36.0**	**64.0**	**5227**
X^2 = 6.182	**df = 4**		**P-value =0.186**

Source: Computed from 2014 GDHS Dataset

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CHAPTER SIX

DETERMINANTS OF CONTRACEPTIVE USE AMONG WOMEN IN GHANA

6.0 Introduction

In this chapter, a binary logistic regression analysis was conducted to further examine the relationship between parity and contraceptive use, controlling for the other variables. The binary logistic regression model was used because the outcome variable, whether the woman is currently using contraceptives or not, is dichotomous in structure. In addition to the main predictor variable (parity), selected individual characteristics of the woman (age and marital status) and socio-economic variables (highest level of education, ethnicity, religion, type of place of residence, region of residence, working status, and household wealth quintile) were included. This level of analysis helps to examine the level of impact of these predictors on contraceptive use. Two models are presented in this chapter to determine the extent of the influence of parity on the use of contraceptives at the multivariate level. In Model 1, the main independent variable (parity) was regressed on contraceptive use to examine the extent to which parity influences the use of contraceptives in the absence of other factors including individual characteristics of women and socio-economic factors. In Model 2, the influence of parity on contraceptive use is further examined in the presence of individual characteristics and socio-economic factors. In this second model, the effects of the individual characteristics and the socio-economic factors are controlled to determine the extent to which parity predicts the use of contraceptives among women in Ghana in the presence of these other factors.

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Moreover, the relationship between the predictors and the outcome variable was determined at a margin of error of 5%. All predictors having a p-value less than 0.05 were significantly related to the use of contraceptives while variables with p-values greater than 0.05 had no significant relationship with contraceptive use. Again, reference categories were set among the subcategories within the main independent variable, individual characteristics, and socio-economic factors to compare the extent of influence of each category on contraceptive use. The exponential Beta (Expo β) or odds ratio values were used to determine the level of influence compared to the reference category. The Expo β for the reference categories was set as 1 which indicates that values below 1 had a lower tendency of using contraceptives than the reference category. And the values above 1 mean the women within such subcategory were more likely to use contraceptives than women in the reference category. Any category with a value of 1 indicates no association between that category and contraceptive use.

6.1 Influence of Parity on Contraceptive Use

From Model 1 in table 6.1, there was a significant association between women's parity and contraceptive use indicating that the parity level of a woman may influence her contraceptive use in the absence of individual characteristics and socio-economic factors. It can also be noticed from the Nagelkerker R^2 value of 0.019 that, women's parity only explains about 2% of the variations in contraceptive use among women. At this level, individual characteristics and socio-economic factors may rather best explain the variations in contraceptive use among women. This model further correctly predicts 64% of the responses.

Compared to the nulliparous women, the primiparous women were 64.2% more likely to use contraceptives. The multiparous women also were about 6% more likely to use contraceptives compared to the nulliparous women in Ghana. Contraceptive use was low among the grand

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multiparous women as they were 11% less likely to use contraceptives compared to the nulliparous women. The result from this model is consistent with the outcome of the study by Frances et al., (2014) in Ghana and Anguzu et al., (2018) in Uganda where women with zero parity were less likely to use contraceptives compared to multiparous women.

Table 6. 1: Binary Logistic Regression Model Indicating the Influence of Parity on Contraceptive Use

	Model 1			
	Exp(B)	95% C.I.for EXP(B)		P-value
		Lower	Upper	
Parity				
0 (RC)	1.00			
1	1.642	1.375	1.961	<0.001
2 – 4	1.058	0.870	1.287	0.574
5+	0.890	0.757	1.045	0.154
Constant	1.623			<0.001
Correct % Prediction	64.0			
Nagelkerker R^2	0.019			
Model chi-square (df)	73.314(3)			<0.001

Source: Computed from the 2014 GDHS Dataset

6.2 The Influence of Women's Parity, Individual Characteristics, and Socio-Economic Factors on Contraceptive Use

Results from model 2 in table 6.2 indicate that after controlling for the effects of individual characteristics and socio-economic factors on contraceptive use, women's parity level still had a significant association with contraceptive use (P<0.001) as it was in the bivariate level and the first model. This indicates that after adjusting for the effects of individual characteristics and socio-economic factors, parity level influenced contraceptive use among women in Ghana. The first hypothesis is therefore accepted as there was a significant association between parity level and the use of contraceptives. This result is consistent with the study conducted in Ghana which

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established a significant association between parity and contraceptive use (Apanga, 2015). Again, the Nagelkerke R^2 value of 0.090 in this model shows that all the predictors used in this study can only explain 9% of the variations within contraceptive use among women in Ghana. Therefore, other predictors not used in this study may be responsible for explaining the remaining 91% variations in contraceptive use. This model further correctly predicts about 63.8% of the survey responses.

After the adjustment, parity, age, marital status, education, ethnicity, and region of residence were significantly related to contraceptive use. However, religion, working status, type of place of residence, and household wealth index did not have any significant association with contraceptive use among women.

The result further shows primiparous women had an odds ratio of 4.432 indicating that women with one child were three times more likely to use contraceptives than the nulliparous women in Ghana. Again, multiparous women with an odds ratio of 2.361 mean these women were 1.361 times more likely to use contraceptives than nulliparous women. Moreover, the grand multiparous women had an odds ratio of 1.327 which means the women with 5+ children have a 0.327 more chance of using contraceptives than nulliparous women in Ghana. It can be observed that the chance of using contraceptives increases largely between parity 0 and 1 but reduces in the subsequent parity levels. This result further confirms the hypothesis that women with zero parity are less likely to use contraceptives compared to women with some children. This result is consistent with the findings in research conducted by Gebre and Edossa (2020) in Ethiopia where nulliparous women were less likely to use contraceptives compared to multiparous women. This outcome was expected as women with zero parity, especially in our part of the world may be

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interested in childbearing and therefore their probability of using contraceptives may be less compared to women with some children.

The second binary regression model shows a significant relationship between women's age and contraceptive use which confirmed the significant association at the bivariate level of analysis. This indicates that the age of a woman is a predictor of contraceptive use in Ghana. This outcome is consistent with the findings of the study by Nonvignon & Nonvignon, 2014 in Ghana which established an association between age and contraceptive use. However, there was no significant association between women from the age groups of 40 – 44 and 45 – 49 years and contraceptive use. The findings further reveal that all adult women were less likely to use contraceptives compared to adolescents (15 -19). While women within 20 – 24 years were 54% less likely to use contraceptives compared to the adolescent girls in Ghana, women within 45 – 49 years were about 17% less likely to use contraceptives compared with adolescents (15 – 19 years). This is inconsistent with the findings by Nonvignon & Nonvignon (2014) and Nyarko (2020) as they revealed that women within the age groups of 20 – 34 and 35 – 39 were more likely to use contraceptives than women between 15 to 19 years. This result is however consistent with the findings by Gebre & Edossa (2020) where adolescent girls had a higher tendency of using contraceptives than adults (35+ years). This result is also consistent with the findings by Ameyaw et al. (2017) in Ghana, where adolescents (15 - 19) had a higher tendency of using contraceptives than other women in the reproductive age group. These sexually active adolescent girls may be schooling or undergoing apprenticeship training so they may be using contraceptives to prevent unplanned pregnancy and focus on education and apprenticeship without interruption through pregnancy and further prevent the shame associated with premarital childbearing.

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There was a significant association between marital status and contraceptive use at both the bivariate and multivariate levels of analysis. The findings from model 2 at the multivariate level indicated that marital status was significantly related to the use of contraceptives at a p-value of 0.016. This result is inconsistent with the findings of the study conducted by Nketiah et al., (2012) in Ghana which indicated no significant association between marital status and contraceptive use. The results further indicate that cohabiting women were less likely to use contraceptives compared to married women while unmarried women were more likely to use contraceptives than married women. The cohabiting women were about 15% less likely to use contraceptives compared with married whereas the unmarried women were 11% more likely to use contraceptives than married women. This is consistent with the findings of Wang et al., (2017) in a study conducted among selected countries in Sub-Saharan Africa and Latin America, and the Caribbean. It is also consistent with the study conducted in Ghana by Appiah, (2020) which reports that unmarried women were more likely to use contraceptives than married women.

Furthermore, a woman's level of education was significantly associated with contraceptive use in Ghana from the multivariate and the bivariate levels of analysis. The results from table 6.2 model 2 reveal that women with some level of education were more likely to use contraceptives compared to women with no education in Ghana. The result of this study is consistent with the findings of the study by Abdulai et al., (2020). From Table 6.2, women with primary education were about 96% more likely to use contraceptives compared to women with no education while women with Middle/JSS/JHS education were 65% more likely to use contraceptives compared to women with no education. The women with Secondary/SSS/SHS/Higher education had a 37% more chance of using contraceptives than women with no level of education. This is inconsistent

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with the outcome of a study by Abdulai et al., (2020) and (Wuni et al., 2017) where the odds of using contraceptives were low among women with primary education compared to women with secondary or higher education. However, it is consistent with the findings of the study by (Machiyama et al., 2018) where it was found that the use of contraceptives was high among women with primary education than women with secondary and higher education. This outcome was least expected as highly educated women are presumed to be well informed and understand the need to use contraceptives to prevent unplanned pregnancy better than women with primary education.

Moreover, results from the second model in Table 6.2 indicate a significant association between ethnic affiliation and the use of contraceptives among women in Ghana. Though ethnicity may predict contraceptive use among women in Ghana, the results further show that the Gurma ethnic group had a significant association with contraceptive use whereas the other ethnic groups did not have any significant association with contraceptive use among women in Ghana. However, the results reveal that women from all ethnic groups had lower odds of using contraceptives compared to Akan women. This result is therefore consistent with the findings of Kyei et al., (2021) and Appiah et al., (2020) who found that women from the Akan ethnic group were more likely to use contraceptives compared to women from all other ethnic groups in Ghana.

Furthermore, religion did not have any significant association with the use of contraceptives among women in Ghana though it was significantly related to the outcome variable at the bivariate level. Findings from Table 6.2 however, show that women from the Traditional/ Spiritual religion and those with no religion were more likely to use contraceptives than Catholic women. While Traditional/ Spiritual women were 7.5% more likely to use contraceptives, women with no religion were 60% more likely to use contraceptives. The outcome is consistent

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with results produced by Ameyaw et al. (2017) where women with no religion had a high tendency of using contraceptives compared to Catholic women. These traditional women and women with no religion may be using traditional methods or have understood the need to use modern contraceptives for effective prevention of unplanned pregnancy. However, the result contradicts the findings by Adjei et al., (2014) where Catholic women were more likely to use contraceptives compared to women with no religion and traditional women. Meanwhile, women from the Orthodox, Pentecostal/Charismatic, Other Christians, and Islam were less likely to use contraceptives compared to Catholic women. These women were 13.4%, 9.7%, 9.5%, and 17.7% respectively less likely to use contraceptives compared to Catholic women. The result of this study contradicts the findings by Westoff & Bietsch (2015) in the study conducted in Sub-Saharan Africa where Pentecostal and Charismatic women were more likely to use contraceptives than Catholic women. Because this study focuses on the use of any method, it is possible most Catholic women in Ghana may be using the approved calendar method by the church or using the modern methods as a study conducted in the United States by Jones & Dreweke (2011) revealed that about 65% of Catholic women were using modern methods. The result is again consistent with the findings by Ahinkorah (2020) in Ghana where the use of contraceptives was more associated with Christian women than Muslim women.

A woman's place of residence was not significantly associated with contraceptive use, at both the bivariate and multivariate levels. However, the results indicate that the probability of using contraceptives was high among rural women than among urban women. Surprisingly, rural women were about 18% more likely to use contraceptives than urban women. This contradicts the findings from several studies including Chintsanya (2013); Apanga et al., (2020); (Lakew et al., 2013); Islam et al., (2020) where contraceptive use was more associated with urban women

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than rural women. However, this study is consistent with the findings by Salifu (2020) in Ghana which indicated that rural women were more likely to use contraceptives than urban women. The increase in contraceptive use among rural women may be attributed to the recent availability of contraceptives in rural areas and the inclusion of family planning services in the National Health Insurance Scheme in certain rural districts in Ghana to ensure affordability (Acher et al., 2020).

Again, the results from model 2 in Table 6.2 show the region of residence was significantly related to contraceptive use among women in Ghana. The findings further revealed that except for the Upper East region, all the other regions were not associated with contraceptive use among women. Results from model 2 however, indicate that women living in Central, Western, Ashanti, Brong Ahafo, Upper East, and Upper West regions had a higher chance of using contraceptives than women in the national capital, Greater Accra. In terms of percentage, women from these regions were 7.9%, 5.1%, 26.1%, 23.8%, 118.8%, and 18.8% respectively more likely to use contraceptives compared to women in the Greater Accra region. Women in the Upper East region, for example, were about 2 times more likely to use contraceptives than women in Greater Accra. Meanwhile, women from Volta, Eastern, and Northern regions were less likely to use contraceptives than women in the Greater Accra region. The women from these three regions had 6.4%, 15.6%, and 25.4% respectively less chance of using contraceptives than women in the Greater Accra region. This result contradicts the findings from most studies in Ghana (Nyarko 2020; Nonvigon & Nonvigon 2014; Aviisah et al., 2018) where women from the three northern regions (North, Upper East, and Upper West) had lower odds of using contraceptives than women in the other regions in the country. However, the result of this study is consistent with the findings by Appiah et al. (2020) who found out that women from the Upper East region were more likely to use contraceptives than women from the other regions of Ghana. They also

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observed a significant increase in contraceptive use among the women in the three northern regions compared to women in the other regions. The improvement in the use of contraceptives among women in the northern part of Ghana may largely be attributed to the introduction of Community-based Health Planning and Services (CHPS) where maternal and child health care and services including family planning are brought to the doorsteps of women in rural communities, especially in the northern part of Ghana.

Concerning the relationship between working status and contraceptive use, though there was a significant association between these two variables at the bivariate level, however, at the multivariate level, the working status of women and the use of contraceptives were not significantly associated at a p-value of 0.254. This means that the fact that a woman is working or not working may not influence the variations in contraceptive use. This outcome is consistent with the findings of the study by Unumeri et al. (2015) which indicated no significant association between women's working status and contraceptive use among women in the North-Eastern part of Nigeria However, the results show that working women have higher odds of using contraceptives than non-working women. Working women were 8.9% less likely to use contraceptives than non-working women. The result is consistent with the findings by Nketiah et al (2012); Nyarko (2020), and (Pekkurnaz, 2020) where the use of contraceptives was high among working women than non-working women.

The relationship between the household wealth index and contraceptives was found to be insignificant at both the bivariate and multivariate levels of analysis. This means that the household wealth index may not have any influence on the variations in contraceptive use among women in Ghana. Meanwhile, the results from model 2 show women from the poorest households were the least to use contraceptives compared to women in the other wealth quintile.

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The results further indicate that while women from the middle class were 14.5% more likely to use contraceptives compared to women from the poorest households, women from richer households were 11.4% more likely to use contraceptives compared to women from the poorest households. Again, women from poorer households were 9.8% more likely to use contraceptives compared to the poorest women. And women from the richest households were also 0.9% more likely to use contraceptives compared to the women from the poorest households. This is consistent with the findings by Nketiah et al. (2012) in Ghana where it was found that women from rich households had a higher tendency of using contraceptives than women from poor households. Women from rich households may be able to financially afford family planning services compared to poor women. However, the result is inconsistent with the findings by Ameyaw et al. (2017) in Ghana as it was indicated that the use of contraceptives was high among poorer women than among women from rich households.

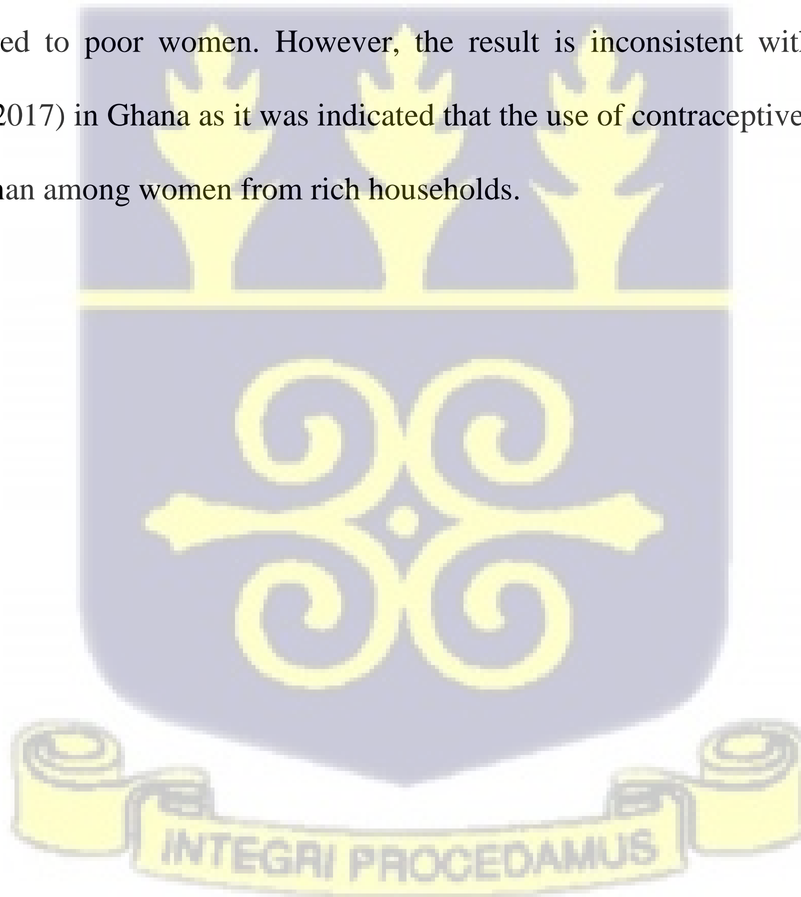

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Table 6. 2: A Binary Logistic Regression Model Indicating Variations in Contraceptive Use by Parity, Individual Characteristics, and Socio-Economic Factors

	Model 2			
Variable/ Indicator	**Exp(B)**	**95% C.I.for EXP(B)**		**P-value**
		Lower	**Upper**	
Parity				
0 (**RC**)	1.00			
1	4.432	3.255	6.035	<0.001
2 – 4	2.361	1.808	3.083	<0.001
5+	1.327	1.096	1.607	0.004
Women's Age				
15 – 19 (**RC**)	1.00			
20 – 24	0.460	0.313	0.675	<0.001
25 – 29	0.304	0.221	0.418	<0.001
30 – 34	0.466	0.347	0.627	<0.001
35 – 39	0.682	0.522	0.907	0.009
40 – 44	0.848	0.640	1.124	0.252
45 – 49	0.829	0.621	1.107	0.204
Current Marital Status				
Married (**RC**)	1.00			
Living Together/ Cohabiting	0.855	0.720	1.016	0.076
Not Married	1.110	0.903	1.363	0.321
Highest Level of Education				
No Education (**RC**)	1.00			
Primary	1.955	1.540	2.482	<0.001
Middle/JSS/JHS	1.653	1.328	2.059	<0.001
Secondary/SSS/SHS/Higher	1.370	1.149	1.634	<0.001

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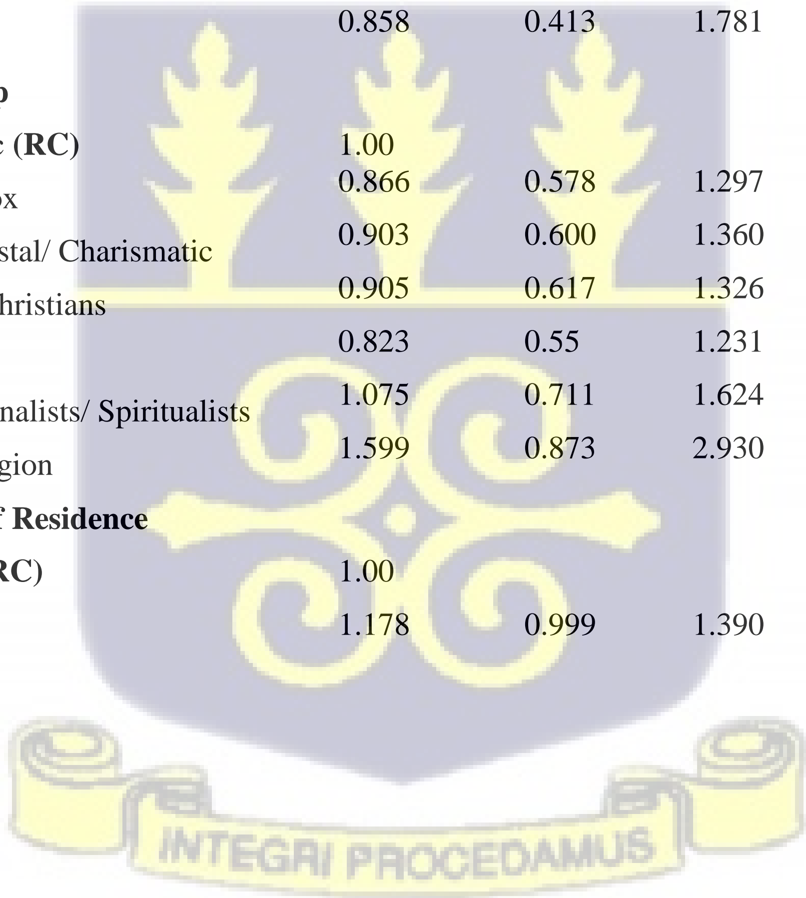
	Model 2			
Variable/ Indicator	**Exp(B)**	**95% C.I.for EXP(B)**		**P-value**
		Lower	**Upper**	
Ethnicity				
Akan **(RC)**	1.00			
Ga/Dangbe	0.783	0.472	1.298	0.343
Ewe	0.894	0.513	1.557	0.693
Guan	0.892	0.523	1.521	0.674
Mole-Dagbani	0.796	0.430	1.476	0.470
Grusi	0.808	0.485	1.345	0.412
Gurma	0.492	0.283	0.856	0.012
Mande	0.927	0.517	1.663	0.800
Other	0.858	0.413	1.781	0.681
Religious Group				
Catholic **(RC)**	1.00			
Orthodox	0.866	0.578	1.297	0.486
Pentecostal/ Charismatic	0.903	0.600	1.360	0.626
Other Christians	0.905	0.617	1.326	0.608
Islam	0.823	0.55	1.231	0.343
Traditionalists/ Spiritualists	1.075	0.711	1.624	0.732
No Religion	1.599	0.873	2.930	0.128
Type of Place of Residence				
Urban **(RC)**	1.00			
Rural	1.178	0.999	1.390	0.051



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Model 2				
Variable/ Indicator	**Exp(B)**	**95% C.I.for EXP(B)**		**P-value**
		Lower	**Upper**	
Region of Residence				
Greater Accra **(RC)**	1.00			
Central	1.079	0.754	1.544	0.679
Western	1.051	0.74	1.492	0.782
Volta	0.936	0.67	1.306	0.697
Eastern	0.844	0.57	1.249	0.396
Ashanti	1.261	0.887	1.792	0.197
Brong Ahafo	1.238	0.884	1.733	0.214
Northern	0.749	0.545	1.029	0.075
Upper East	2.188	1.534	3.121	<0.001
Upper West	1.188	0.881	1.601	0.258
Current Working Status				
Not Working **(RC)**	1.00			
Working	0.911	0.777	1.069	0.254
Household Wealth Quintile				
Poorest **(RC)**	1.00			
Poorer	1.098	0.809	1.489	0.549
Middle	1.145	0.878	1.495	0.317
Richer	1.114	0.886	1.399	0.355
Richest	1.009	0.827	1.230	0.933
Constant	1.442			0.364
Correct % Prediction	63.8			
Nagelkerke R^2	0.090			
Model chi-square (df)	353.852(43)			<0.001

Source: Computed from the 2014 GDHS Dataset

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CHAPTER SEVEN

SUMMARY, CONCLUSION, AND RECOMMENDATION

7.0 Introduction

The key findings from univariate, bivariate, and multivariate levels of analysis have been summarised on the relationship between women's parity and contraceptive use in Ghana in this section. Recommendations are further made based on the key findings to inform further studies and policymaking.

7.1 Summary of Key Findings

This study was conducted with the general objective of assessing the relationship between women's parity and contraceptive use in Ghana. Specifically, this study was to examine the relationship between women's parity and contraceptive use, examine where individual characteristics of women mediate the relationship between parity and contraceptive use among women in Ghana, and ascertain whether other socio-economic factors influence contraceptive use among women in Ghana. Two hypotheses were further tested to understand how parity is related to the use of contraceptives among women. The first hypothesis was that there is an association between parity and contraceptive use among women in Ghana and the second hypothesis was that, nulliparous women were less likely to use contraceptives than women with some children. All these hypotheses were met at the end of this study. Firstly, parity was significantly associated with contraceptive use at the bivariate level with a p-value of less than 0.001 and the multivariate level with a p-value of less than 0.001 after controlling for the effects of individual characteristics of women and other socio-economic factors. Secondly, after

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controlling for the effects of individual characteristics of women and other socio-economic factors, women with zero parity were less likely to use contraceptives compared to women with some children.

Three levels of analysis were used to examine the background characteristics of the 5227 women of reproductive age who constituted the sample used in this study and further examined the association between parity and the use of contraceptives among these women.

At the univariate level of analysis, it was found that 36% of the 5227 women sampled were using contraceptives (any method) to prevent unplanned pregnancy. Again, the majority of the women were multiparous whereas the minority were grand multiparous. A chi-square test was run at the bivariate level to determine the relationship between the predictors and the outcome variable. The results indicated that parity, age, education, marital status, ethnicity, religion, region of residence, and working status were significantly associated with contraceptive use among women in Ghana. However, the household wealth index and the type of place of residence were not significantly related to the use of contraceptives among women in Ghana.

Furthermore, at the multivariate level, two models were ran using binary logistic regression to examine the relationship between women's parity and the use of contraceptives. Model 1 was used to examine the association between parity and the use of contraceptives without controlling for the other factors. Parity was significantly associated with contraceptive use in this first model. From the second model, the correlation between parity and contraceptive use was examined in the presence of individual characteristics and other socio-economic factors. After controlling the individual characteristics and socio-economic factors, women's parity remained

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significantly associated with contraceptive use among women in Ghana at a p-value of less than 0.001.

The study further revealed in the second model that, religion, type of place of residence, working status, and household wealth index had no association with contraceptive use among women in Ghana. However, parity, age, the highest level of education, marital status, ethnicity, and region of residence were associated with contraceptive use among women in Ghana. The odds of using contraceptives were also high among primiparous women, women within 15 - 19 years, not married, women with primary education, Akans, and women from the Upper East region.

7.2 Conclusion

The rate of contraceptive use in Ghana is increasing with time as indicated in this study where 36% of the sampled women were using contraceptives and this may be attributed to the several programmes, policies, and interventions by the government, Non-Governmental Organisations (NGOs), and donor partners in the area of reproductive health including family planning, especially in rural communities in Ghana. This study has further established an association between women's parity and contraceptive use in Ghana where women with zero parity were less likely to use contraceptives compared to women with some children and this result conforms to several research findings from the literature.

Parity alone may not fully explain the variations in the use of contraceptives among women in Ghana and therefore the inclusion of variables such as age, marital status, education, ethnicity, religion, type of place of residence, region of residence, working status, and household wealth index of women helps to adequately explain the variations in contraceptive use among women in Ghana.

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7.3 Recommendations

Based on the findings where parity, age, the highest level of education, ethnicity, marital status, and region of residence were found to be significantly associated with contraceptive use among women in Ghana, the following recommendations were made:

Firstly, the study established a significant association between parity and contraceptive use. Since the results indicated that the tendency to use contraceptives was low among women with 5 or more children compared with primiparous and multiparous women, efforts must be made by organisations working in the areas of reproductive health including family planning to educate women with high parity (5+) on the effects of high parity on their reproductive health and the importance of using contraceptives to regulate childbearing.

Secondly, the Ghana Health Service and the related organisations working in the areas of family planning should be targeting adult women as the results reveal that they had lower odds of using contraceptives compared to adolescents (15 -19). This indicates that several programmes and interventions like the concept of adolescent corners by Ghana Health Service towards an increase in contraceptive use among adolescents are having a positive impact on contraceptive use. While adolescent-related programmes need to be intensified, the advocacy and education towards an increase in contraceptive use among female adults should also be strengthened to further reduce unplanned pregnancy across all age groups.

INTEGRI PROCEDAMUS

Thirdly, policymakers and programme implementers should design specific programmes for women with secondary and higher education to increase contraceptive use among them. The results of this study indicated that women with primary education had higher odds of using

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contraceptives than women with secondary and higher education which is surprising because highly educated women are assumed to be well-informed on the need to use contraceptives to regulate childbearing and prevent unplanned pregnancy.

Moreover, it is recommended that qualitative studies be conducted to critically examine why the odds of using contraceptives were high among primiparous women compared to grand multiparous women, adolescents than adults, and women with primary education more than highly educated women.

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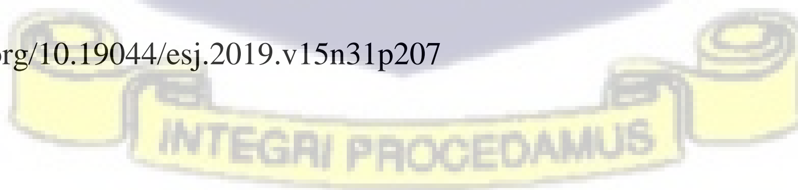

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