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THE EFFECT OF WOMEN'S EMPOWERMENT ON UTILISATION OF REPRODUCTIVE HEALTH SERVICES IN GHANA

BY

AMANKWAH, RAYMOND KOFI

(10443129)

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DECLARATION

I do hereby declare that this thesis is the result of my research and has not been presented by anyone for an academic award in this or any other University. All references used in this work have been fully acknowledged.

I bear sole responsibility for any shortcomings.

....

AMANKWAH RAYMOND KOFI **DATE**

(10443129)

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CERTIFICATION

This is to certify that this work was done under my supervision according to the rules and regulations of the University of Ghana.

....

DR. GORDON ABEKAH-NKRUMAH **DATE**

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DEDICATION

This research is dedicated to all women in Ghana especially, my lovely wife, Miss Mary Boateng and my two daughters Josephine Amankwah and Mildred Amankwah.

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LIST OF ABBREVIATION

ANC	Antenatal Care
BPFA	Beijing Platform for Action
CEDAW	Convention on the Elimination of All forms of Discrimination Against Women
DHS	Demographic and Health Survey
DFID	Department for International Development
FPC	First Principal Component
GDP	Gross Domestic Product
GNP	Gross National Product
GDI	Gender Related Development Index
GEM	Gender Empowerment Measure
GHS	Ghana Health Service
GII	Gender Inequality Index
GSS	Ghana Statistical Service
H_O	Null hypothesis
H_A	Alternative hypothesis
H.H	Household
GDHS	Ghana Demographic and Health Survey
ICPD	International Conference on Population and Development
IPV	Intimate Partner Violence
IUD	Intrauterine Device

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KMO	Kaiser Mayer Okline
MSA	Measure of Sampling Adequacy
MCH	Maternal and Child Health
MMR	Maternal Mortality Ratio
MDGs	Millennium Development Goals
NHIS	National Health Insurance Scheme
NSCPCCV	Non-Cluster Proportion of Complete Child Vaccination
NPC	National Population Council
OECD	Organisation for Economic Co-operation and Development
PCA	Principal Component Analysis
PHC	Population and Housing Census
TBAs	Traditional Birth Attendants
UNDP	United Nations Development Programmes
UNICEF	United Nations Children's Emergency Fund
UNFP	United Nations Population Fund
UN	United Nation
WHO	World Health Organisation
WERHS	Women's Empowerment and Reproductive Health Services

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ABSTRACT

The study examined the effect of women's empowerment on utilisation of reproductive health services in Ghana. Women's empowerment dimensions included access to economic resources and social norms, while reproductive health services comprised: (contraceptive use, timing of first antenatal visits, skilled birth attendance and place of delivery). The study used the Ghana Demographic and Health Survey 2008, dataset, which is a nationally representative sample. From the two empowerment dimensions, the study computed four empowerment indices using Polychoric Principal Components Analysis (PCA), which was centered on economic power, family decision, acceptance of violence and women's autonomy. The marginal effects from probit regression result showed that after controlling for socio-demographic variables: 1) Economic power was found to be associated with modern contraceptive use and timing of first antenatal visits. No positive significant association was found between economic power and the other two reproductive health service variables. 2) Family decision was not associated with any of the four reproductive health variables. 3) Not accepting justification for wife beating was associated with skilled birth attendance and place of delivery, but not associated with contraceptive use and timing of first antenatal visits. 4) Women's Autonomy was also not associated with any of the four reproductive health services. Interventions and policies that are aimed at empowering women to take charge of their reproductive health should focus particularly on women's access to economic resources and informal institutions.

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CHAPTER ONE

INTRODUCTION

1.0 Introduction

Women's empowerment is a key instrument towards achieving the Millennium Development Goals (MDGs). The empowerment of women is also of public health importance in Ghana and Africa at large. When women are empowered, it will go a long way in helping to prevent the high incidence of maternal and child mortality, as well as improve child and maternal health care (United Nations Development Programme, 2005). This work examines the effects of women empowerment on utilisation of reproductive health services in Ghana.

1.1 Background to the Study

Reproductive health is one of the greatest development and health challenges facing the developing world. The estimated maternal deaths worldwide in 2005, was 536, 000 (WHO, UNICEF, UNFPA & World Bank, 2005). From this estimate, developing countries accounted for 99% (i.e. 533, 000) of these deaths. Sub-Saharan Africa and Asia accounted for 86% of the global maternal deaths (Lozano et al., 2013). The lifetime risk for women in the world is highest in Africa (at 1 in 26), followed by Oceana (1 in 62) and Asia (1 in 120), with developing countries having the smallest (1 in 7, 300) (WHO, UNICEF, UNFPA & World Bank 2005). A report released by the World Health Organisation (WHO) in 2010, estimated that 358, 000 maternal deaths occurred globally in 2008 (i.e. About 99% of all maternal deaths), while only 1 percent occurred in the developed world (Abekah-Nkrumah et al., 2014). In addition to maternal deaths, perinatal mortality (i.e. neonatal deaths that occur within the first week of life and

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stillbirths) indicators suggest that compared to developed nations, developing nations have a higher perinatal mortality rate (WHO and UNDP, 2010).

In Ghana, the 2008,Ghana Demographic and Health Survey (DHS) report placed Ghana's Maternal Mortality Ratio (MMR) at 350 per 100, 000 deaths (GSS, G., & Macro, I. C. F., 2009). The lifetime risk of maternal death for women in Ghana was (at 1 in 66).

The 2008, Ghana DHS further revealed that the total number of maternal deaths in 2008 was 26,000. Such high maternal deaths are preventable through the utilisation of reproductive health services available (Ghana Statistical Service (GSS, G., & Macro, I. C. F., 2009). According to Cleland et al., (2006), improving maternal health care is a major goal of basic health care initiatives in most developing nations. This can be achieved through the enhancement of reproductive health services utilisation, especially through the use of contraceptive, antenatal care services, skilled birth attendance and place of delivery. For example, access to modern contraceptives in most developing nations can reduce maternal and neonatal motilities from 22% to 30% (Ronsmans et al., 2006). The World Health Organisation in (2002) asserted that antenatal care visits have great benefits in preventing the adverse effects when they are sought early during the time of pregnancy. Such visits enable health workers to detect pregnancy related complications and attend to them early. In effect, the life of the mother and child are safe. Additionally, access to skilled birth attendance and emergency obstetric care during delivery and child birth prevents maternal deaths by up to 60% (WHO et al., 2009; Lawn et al., 2010). Furthermore, delivering in health facilities under proper medical supervision and hygienic conditions reduces serious illnesses or deaths of the mother and baby (WHO, 2005).

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In order to reduce maternal and child mortality, the United Nations Population Fund (UNFP), in collaboration with the World Bank in 1987, sponsored the Safe Motherhood Conference in Nairobi. The Safe Motherhood was aimed at reducing maternal mortality and neonatal deaths. The Mother-Baby Package was, therefore, formulated to improve the well-being of mothers and newborn babies (WHO, 1994). This initiative was based on four components of Safe Motherhood. The specific interventions include: (i) Family planning to ensure that individuals and couples have the information and services to plan the timing, number and spacing of pregnancies. (ii) Antenatal care to prevent complications where possible and ensure that complications of pregnancy are detected early and treated appropriately. (iii) Clean/Safe delivery to ensure that all birth attendants have the requisite knowledge, skills and equipment to perform a clean and safe delivery and provide postpartum care to the mother and the newborn baby.(iv) Essential Obstetric care to ensure that essential care for high risk pregnancies and complications are available to all women who need it (WHO, 1994). The Safe Motherhood Initiative recognises the need for funding agencies, governments and non-governmental organisations to make utilization of reproductive health services a major priority and to dedicate the necessary political and financial support towards improving reproductive health. After putting into practice the Safe Motherhood Initiatives in most developing nations, policy makers and researchers have become more interested in unearthing the factors that determine the use of reproductive health services. Studies have documented that Socio-Demographic variables such as women's age, residency, and number of living children have an influence on reproductive health service utilisation (Chakraborty et al., 2003). On the other hand, it has also been found out that women's empowerment at the household level may also have an influence on utilisation of reproductive health (Lee-Rife, 2010; Alsop and Heinsohn, 2005; Dixon-Mueller, 1998). The empowerment of

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women and reduced gender inequality has been shown to increase in the use of prenatal and delivery care services (Beegle et al., 2001). Attainment of all these will improve women's utilisation of reproductive health care services leading to improved health outcomes and reduction of maternal mortalities.

1.2 Statement of the Problem

The issue of maternal deaths is a critical issue that many developing countries are battling with. Maternal mortality is not only a developmental problem, but also a socio–cultural issue that concerns every nation, society, family and every individual. Although health facilities are relatively available and accessible and cost of health services is generally low and are also covered by the National Health Insurance Scheme (NHIS), maternal mortality is still high. The 2008 Ghana DHS report indicated that the contraceptive prevalence rate was 24% for married women, but the use of modern contraceptive methods declined from 19% in 2003 to 17% in 2008. More so, women who had their first antenatal visits before the fourth month of pregnancy was at 55%, skilled birth attendance was at 59%, while 57 percent of births were delivered in health facilities.

Although utilisationof reproductive health service is aimed at improving maternal health, maternal and neonatal deaths still exist. Women sometimes fail to utilise these services even though they are available and accessible. According to Fried et al., (2012), the leading causes of maternal mortality in Africa are lack of education, access barriers and women's empowerment. The 2008 Ghana DHS report also revealed that women had little influence in health related decisions in households, either concerning their own health or that of their children. The survey report further indicated that women encountered problems such as getting permission to go for

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treatment, insufficient money for treatment, transportation, unavailability of drugs, long distances to facility and concern there may not be professional health care providers. Another cause of this maternal and infant death may also have a combination of cultural beliefs and practices, male-dominance; low status of women and high fertility rate, which possibly affect pregnancy outcomes on the continent, especially in Sub-Saharan Africa (Senah, 2003; Nwokocha, 2007). From the discussion above, it may be understood that the health seeking behaviour of women in developing countries lies mainly on social and economic factors. Economic factors such as the use of income, education, assets owned, productive inputs among others, influence the capacity of women to utilise reproductive health services (Beegle, Frankenberg and Thomas, 2001;Wolff, Blanc, & Gage, 2000; and Kishor 2000a). Also, social aspects such as women's decision-making at the household level, justification for accepting wife beating and freedom of movement also impact on utilisation of reproductive health services (Mason and Smith, 2000; Govindasamy and Malhotra, 1996; Kishor, 2000a).

This study suggests that empowering women for them to have control over economic decisions and social factors will enhance women's utilisation of reproductive health services. Nonetheless, global efforts to empower women have aimed to redress gender-based inequalities by implementing programmes to increase opportunity, control, and inclusion for women (UN Women, 2011).Women's empowerment has received a considerable attention in the past two decades with most studies concentrated at the domestic level. Central to disagreement among researchers is the suggestion that empowering women could improve their capability to bargain or make decisions for household resources and therefore making headway on reproductive health. However, the most problematic issue in the empowerment studies is how to measure empowerment. Although the process of empowerment depends on the women

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themselves,involving having control over access to economic resources, it can also be facilitated through involving women in decision-making, rejecting violence and encouraging women's autonomy among others. Change has to happen in the structures and non-formal institutional frameworks (family laws, wife beating, control over sexual rights and many others) in order to make the self-transformation process of empowerment sustainable (Kabeer, 2001; Malhotra, & Schuler, 2005).

Although women's empowerment is typically discussed in relation to social and economic empowerment, the economic empowerment of women has received particular attention and is often cited as one of the most important ways to promote gender equality and improve the well-being of not only women, but children and societies (Pearson, 2004; and Blumberg, 2005). From this discussion, there still remains a huge gap in the literature considering the concentration of these studies on economic empowerment. For instance, Schuler and Hashemi (1994) examined the effect of microcredit as a form of empowerment on contraceptive use. In similar studies, Beegle, Frankenberg and Thomas (2000) examined the effect of individual assets and education on prenatal care and hospital delivery. However, these empirical studies on empowerment and reproductive health limited the discussions on economic empowerment. This study goes beyond the economic empowerment of women by including the measure of economic empowerment together with social norms. The study also fills the gap by using a comprehensive reproductive health service by the (WHO) which is based on contraceptive use, timing of antenatal visits, skilled birth attendance and place of delivery. Furthermore, the current study will index the empowerment variables using Polychoric Principal Component Analysis (PPCA). It is assumed that, measuring of empowerment to reflect social norms may bring exciting results that may be essential for household formulation of policy on women's bargaining power.

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1.3 Research Objectives

1.3.1 General Objective

Following from the above discussions the main objective of the study is to measure women's empowerment in a manner that reflects access to economic resources and social norms and examine their comparative effects on utilisation of reproductive health services among women in Ghana.

1.3.2 Specific Objectives

1. To examine the effect of access to economic resources on utilisation of reproductive health services among women in Ghana.
2. To examine the effect of social norms on utilisation of reproductive health services among Ghanaian women.
3. To examine whether the effect of social norms on utilisation of reproductive health services is as important as access to economic resources among women in Ghana.

1.4 Hypothesis

The null hypothesis and the alternative hypothesis are stated below:

Hypothesis 1:

H_{01}: Access to economic resources (empowerment) does not affect utilization of reproductive health services among women in Ghana.

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H_{A1}: Access to economic resources has an effect on utilisation of reproductive health services among Ghanaian women.

Hypothesis 2:

$H_{o2:}$ Social norms (empowerment) do not affect utilisation of reproductive health services among women in Ghana.

H_{A2}: Social norms (empowerment) have an effect on utilisation of reproductive health services among women in Ghana.

Hypothesis 3:

$H_{o3:}$ There is no difference between the means of access to economic resources and social norms on the utilization of reproductive health services among women in Ghana.

H_{A3}: There is a difference between the means of access to economic resources and social norms on the utilization of reproductive health services among women in Ghana.

1.5 Significance of the Study

The study makes recommendations that will address utilisation of reproductive health challenges generally among women in Ghana. Empowerment of women is also critical for the development of a country because it enhances both the quality and quantity of human resources available for development. The study will give a more insight into the issue of empowering women at the household level which may lead to utilisation of reproductive health studies. The findings and recommendations will be made available to enrich the development of empowerment dimensions

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and can be used by other researchers for any academic research work in the context of women empowerment in Ghana.

1.6 Scope of the Study

The GDHS 2008 dataset is used to assess how the social norms moderate access to economic resources in the utilisation of reproductive health services in the Ghanaian community. This study was also restricted to women respondents who were interviewed in 2008 Ghana DHS.

1.7 Organisation of the Study

The final thesis will be categorised into six (6) chapters. The first chapter is called the STUDY which includes the following: research background, the research problem, specific objectives of the study, the research significance of the study, the design, the scope of the study, the organisation of the study and the conceptual framework. Chapter two is called Women's empowerment and health status in the Ghanaian context and is made up of background issues in Ghana. Conceptualising women's empowerment and maternal health which will include theoretical modeling and empirical literature will be presented in chapter three (3). The methodologies and approach are presented in the fourth chapter. Discussion of women's empowerment and health status findings is positioned in existing literature in the fifth chapter. The sixth chapter is made up of a summary, conclusion and recommendations of the study.

1.8 Conclusion

In this chapter, the background issues of reproductive health care services have been discussed. The chapter has discussed the trend of maternal mortality based on (WHO) estimate. It was

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found out that although reproductive health care services are present and accessible; there are other factors such as women's empowerment that also has an effect on reproductive health care utilisation.

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CHAPTER TWO

GHANAIAN CONTEXT OF WOMEN'S EMPOWERMENT AND REPRODUCTIVE HEALTH SERVICES (WERHS)

2.0 Introduction

The Chapter is focused on giving insight into the role of women's empowerment in the Ghanaian context in order to better understand why empowering women can encourage them to utilise reproductive health services.

2.1 Background Issues

Ghana, located in the Sub-Saharan Africa Region, is listed among the poorest countries in the world (WHO, 2009) and the government's development policy is to find a way out of the poverty and the high maternal mortality. However, attainment of this objective is impeded by serious handicaps such as high child mortality, maternal mortality, a high fertility rate, malaria and other diseases as well as low amount of human capital, especially among girls and women of reproductive age. According to the 2010 Population and Housing Census report, Ghana has a population of 24.87 million with females comprising 51.2% and males 48.8% males (Ghana Statistical Service (GSS) et al., 2012). Ghana is an ethnically diverse society with over 45 ethnic groups. The Population and Housing Census (2010) report further showed that 40% of the populations were under the age of 15 years.

According to the Ghana Demographic and Health Survey (2008), the country's total fertility rate was 4.0 children per woman (GSS, G., & Macro, 2009). With the low educational levels among

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women in particular, it would be reasonable to assume that the nation has the possibility of a high population growth. The literacy rate for women in Ghana was 52 percent compared to 63 percent for men, according to the 2010 Population and Housing Census report. The lower level of literacy among females has a consequence for fertility, mortality and development. The Government of Ghana has to tackle these issues from gender equity and the perspective of women's empowerment. In Ghana, as in many parts of Sub-Saharan-Africa, male members of the family are the key decision-makers while women's decision-making capacity is limited. According to Makinwa and Jensen (1995), women in West African countries are most often perceived to have less or no control at all over resources.

2.2 Empowerment of Women in Ghana

Article 17(1) of the 1992 Constitution of Ghana, prohibits discrimination on the grounds of gender, race, colour, ethnic origin, religion, creed or social or economic status. Realising the need for addressing gender inequalities, Ghana has committed itself to global and regional conventions which mandate the implementation of policies and programmes that may result in empowering women, protecting their sexual and reproductive rights and promoting gender equality. Some of these protocols include: Convention on the Elimination of All forms of Discrimination Against Women (CEDAW), The Universal Declaration of Human Rights in 1948; Protocol to the African Charter on Human and Peoples' Rights and the Rights of Women in Africa; Beijing Platform for Action (BPFA); Solemn Declaration on Gender Equality in Africa and the Millennium Development Goals (MDGs).

Although these international and regional conventions try to empower women and change gender inequalities, the informal institutions in the Ghanaian society, control gender relations in the

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society and in many instances, justify discrimination against women. Ghana is a patriarchal and patrilineal society in which many cultural beliefs and informal institutions create a situation where there is discrimination against women. The introduction of Demographic Health Survey has given insight into the capturing or monitoring of women's empowerment in Ghana. The Ghana Demographic and Health Survey (GDHS) 2008 collected data that were related to women's empowerment and reproductive health services. The Ghana DHS captured empowerment in the form of receipt of earnings, decision-making, acceptance of violence against women, the degree of freedom of movement among others (GSS, G., & Macro, 2009). Other researchers also considered: economic, familial/interpersonal, legal, and socio-cultural factors, among others which may probably influence women's reproductive health (Malhotra et al., 2002)

2.3 Reproductive Health in Ghana

The plan of reproductive health means individuals are able to have a safe and a satisfying sexual life. They also have the freedom to reproduce and freedom to decide whether, when, whom and how often to do so (Carlson, 2004). Ghana, therefore, approves the principle of reproductive health care as a constellation of preventive, curative and promotional services to improve on the health and well-being of the population, particularly, children, adolescents and mothers. After the International Conference on Population and Development in 1994, (UN, 1994) there was a plan by the Government to move to a broader reproductive health care setting. To ensure an effective reproductive health, there are various policies that guide the implementations of programmes such as the Safe Motherhood Initiative, which was started in 1987 as a component of one of the

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larger reproductive health programmes. The Safe Motherhood Initiative is one of the programmes components of reproductive health.

2.4 Conclusion

The chapter has given insight into women's empowerment in the Ghanaian context. The study area included the ten regions of Ghana. The provisions in the constitution regarding laws on discrimination against individuals and Ghana's being signatory to several protocols on women's empowerment have been discussed.

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CHAPTER THREE

CONCEPTUALISING WOMEN'S EMPOWERMENT

3.0 Introduction

This section discusses the conceptualisation of women's empowerment and the utilisation of reproductive health care services. It includes a description of the variables used, justification for the proxies used to capture women's empowerment in this study and review of empirical studies done.

3.1 Definitions and Conceptualising Empowerment

There is no universally accepted definition of the widely-employed term "women's empowerment". Studies on empowerment support the view that the term is multidimensional, multifaceted and context-specific (Charmes and Wieringa 2003; Kabeer 2005; Malhotra and Mather 1997). Hence, what is valid in one Socio-Cultural context may not be the same in another context. Studies on women's empowerment have, therefore, linked it with power, autonomy, liberation, self-determination, status, valuation and also simply to the well-being of people.

What is empowerment? Sen (1999) defines empowerment as an expansion in an individual's agency, that is, expansion in one's power to represent and bring about change to those whose achievement can be evaluated in terms of their own values and aims. Hindin, Kishor, &Ansara(2008) also defineswomen's empowerment as the situation in which women have more control over their own lives, bodies and environments. Another author Alsop et al., (2006, p. 10) also defines empowerment as a group's or individual's capacity to make effective choices, that

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is, to make choices and then to transform those choices into desired actions and outcomes. From these definitions, it can be recognised that empowerment is essential in enhancing an individual's capability to make a change in his or her environment, which is supposed to have an effect on their lives. The literature contains a whole range of dimensions for investigating women's empowerment like; autonomy (Dyson & Moore 1983; Basu&Basu 1991; Jeejebhoy&Sathar 2001), agency and status (Tzannatos, 1999), women's land rights (Quisumbing& de la Briere 2000)), domestic economic power (Gage, 2007), bargaining power (Beegle et al., 2001;Hoddinott& Haddad 1995, power (Agarwal, 1997), and patriarchy (Malhotra et al., 2005). Scholars have usually operationalised it to suit their area of studies or interest. From the above studies, women may be empowered in many ways: socially, economically, legally, psychologically and politically.

In spite of several attempted definitions of women's empowerment, this study is focused on adopting the definition proposed by Kabeer, 1999 and England 2000. NailaKabeer defines empowerment "as the process by which those who have been denied the ability to make strategic life choices acquire such ability" (Kabeer, 1999). She describes disempowerment as "to be denied choice" (Kabeer, 1999, p. 436). She further develops three main theories of empowerment. The first part of the definition entails "preconditions" of empowerment which include economic as well as various human and social resources (Kabeer 1999). The exercise of power or agency in the presence of resources is the "process" of empowerment. More so, resources and agency together create the potential for certain outcomes called "achievements." This model is useful for differentiating between the components of empowerment. The causal sequence of England's (2000) model is useful because it also identifies directional relationships.

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The preconditions in England's model include economic resources and norms held by others. Access to resources and ability to negotiate norms affect achievement through effect on control of power. This power may be defined as access to and control over financial and physical assets, including employment and income earned from work or income generating activity. Centered on the above discussion, this study defines women empowerment as a woman's ability to make her own life choices and also to bargain within the gender components. The beginning part of the definition by Kabeer (1999) depicts agency and resources. Agency entails more than observable action; it encompasses the meaning, motivation and purpose which individuals bring to their activity, their sense of agency, or 'the power within'. This 'power within' refers to the individual's capabilities, knowledge, self-esteem and belief to make changes in their own lives. While the agency tends to be operationalised as 'decision-making' in the social science literature, it can take a number of other forms. It can take the form of bargaining and negotiation, deception and manipulation, subversion and resistance as well as more intangible, cognitive processes of reflection and analysis. It can be exercised by individuals as well as by collective action (Kabeer, 1999). Agency has both positive and negative meanings in relation to power. In the positive sense of 'power to': it includes decision-making power within the household, community and workplace not just in places or areas that are traditionally regarded as women's realm but extending to areas that are traditionally regarded as being controlled by men. Agency can also be exercised in the negative manner of 'power over' which entails manipulation and deception, violence, subversion and power-losses. Resources, for instance, include individual assets and capabilities (Narayan, 2005). Such assets include land, housing, livestock, savings, jewelry, material, human and social resources, education, income, land and many others (Sen and Baltiwala 2000).

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The second part of the explanation "ability to bargain within gender component" conveys women's relative level of adherence to contextual specific norms and beliefs. Mason (1995) defines "gender component" as the "socially constructed expectations for male and female behaviour that are found (in variable form) in every known society. Three dimensions of empowerment have so far emerged from the discussion above: agency and resources from Kabeer's model and social norms from England's model. However, from the discussion, as social norms and agency are somehow interlinked the two are combined into a single dimension named social norms. It can be presumed from the above discussion that the empowerment variable is made up of two dimensions: access to economic resources and social norms as shown in the conceptual framework below:

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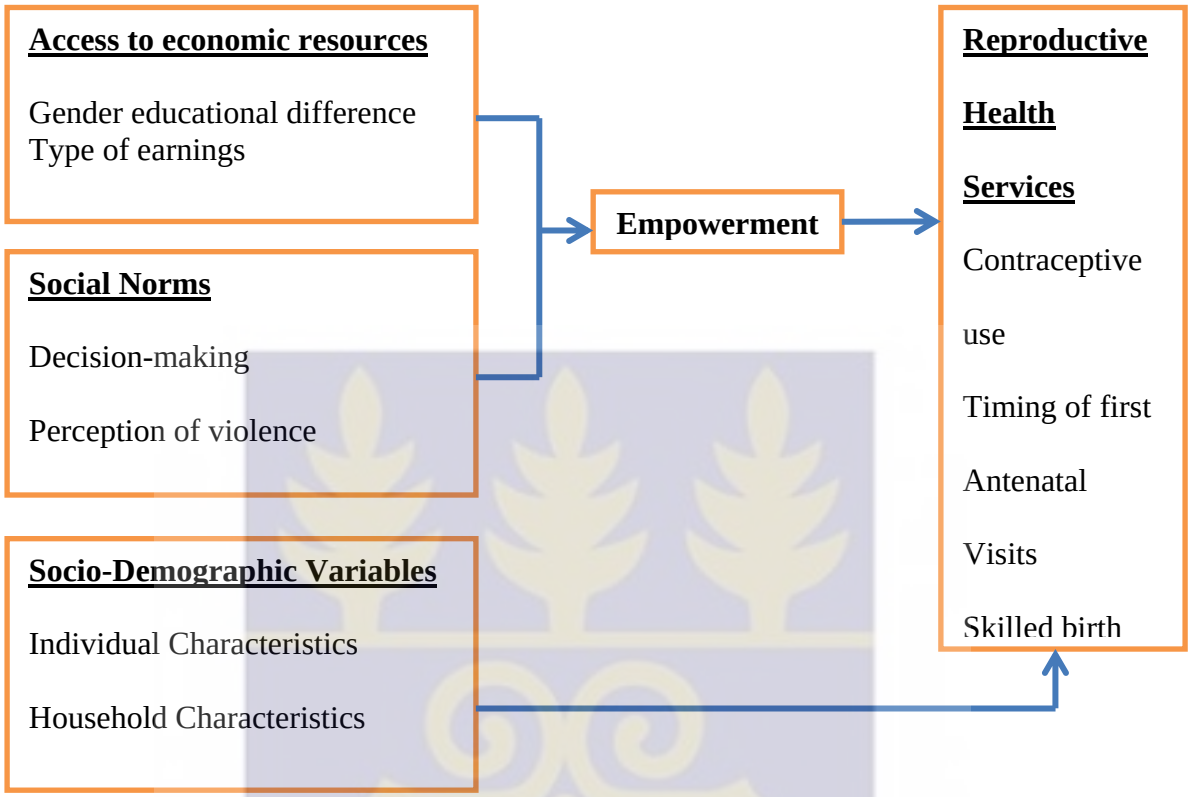

Figure 1: Conceptual Framework of Relationships: Women's Empowerment and Utilisation of Reproductive Health Services.

From the figure one (1) above, both components i.e. access to economic resources and social norms (decision, bargaining), that are available to women can lead to empowerment. The empowerments of women with access to economic resources and social norms have an influence on "achievements" (reproductive health services). On the other hand, socio-demographic variables also have an independent effect on utilisation of reproductive health care services. In figure (1) access to economic resources and social norms is what was referred to as "pre-conditions" for empowerment. In the framework access to economic resources and social norms are conceptually separated so that measures for the social component of women empowerment can be theoretically isolated and empirically measured. Furthermore, the separation also permits

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the association between economic pre-conditions of empowerment and women's relative level of power in the gender system to be analysed. In the framework, social norms refer to the actions of women that reflect the exercise of power. Within the framework, the gender component of women's empowerment can be conceptualised as their relative power within the gender system. Gender system was defined by Mason (1995) as the "socially constructed expectations for male and female behaviour that are found (in variable form) in every known society. Social norms, therefore, become possible to measure as women's relative level of bargaining on context specific norms. For women to be "empowered" by this definition means to exercise more power than other women in the same context.

From Figure one (1), women empowerment can be measured and a theory of gender can be developed in demographic research. Social norms can be identified from the gender norms which prescribe appropriate behaviour for women. Women's level of empowerment can, therefore, be measured by their relative level of adherence to gender norms. Women who defy the gender system (for any reason) are then considered to be empowered. It is worthy to note that the system of gender norms cannot be directly observed; therefore, the actual exercise of bargaining is used as indicators of the latent system of gender norms. Gender norms become obvious and measurable when women are able to break them. The gender component of women's empowerment can be measured using statistical techniques for latent variable such as Principal Component Analysis (PCA) for the computation of empowerment index.

3.2 Dimensions of Women's Empowerment

A study by Malhotra et al., (2002) synthesised and listed the most commonly used dimensions of women's empowerment. They categorised women's empowerment into six dimensions:

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economic, socio-cultural, family/interpersonal, legal, political and psychological. But due to the unavailability of all the data regarding the aforementioned dimensions, women' empowerment in the context of this study, has been narrowed into two dimensions which include access to economic resources and social norms.

3.2.1 Access to Economic Resources

Economic analysis of negotiation as a power within the household has usually focused on economic resources that are exogenous to labour supply. They include financial assets, productive contributions, time, both current and those brought into marriage, (Beegle et al., 2001; Frankenberg and Thomas, 2000; 2000; Doss, 1999 and Narayan, 2002), unearned income (Schultz, 1990; Thomas, 1990) or transfer payments and welfare receipts (Lundberg et al., 1997). Additionally, some examples of human resources are education, knowledge and skills. However, membership in groups and access to kin and other social networks are other examples of social capital (Sen and Batiwala, 2000; Quisumbing and Maluccio, 2000; Kabeer 1999). Indicator variables as a proxy for economic power to be used in this study as access to economic resources were selected from Ghana DHS and other proxy indicators from empirical studies as a reference (Schuler and Hashemi, 1994; Bloom et al., 2001), namely freedom of movement, economic security and stability and decision-making in daily life. Thus, for this study, access to economic resources is measured with three variables: type of earnings, gender educational difference and whether the woman was working.

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3.2.1.1 Type of Earnings

This study defines economic empowerment as a process whereby the lives of women change from a place where they have less access to economic resources to a situation where they see economic improvement in their lives. As the concept of empowerment has become important in the lives of women, this idea has been extended to incorporate power in a number of spheres and control over resources, has become a particularly contested aspect of empowering women. Blumberg (2005) goes further to say that enhancing women's control over income and other key economic resources is a *magical option* for gender equality, empowerment and development. Blumberg argues that through the enhancement of women's economic power in the domestic sphere in relation to control over resources, women's relative level of adherence to contextually specific norms and beliefs can be reduced. He adds that although women's self-confidence increases, they tend to also have a greater voice in the household and therefore women can begin to have control over *life options* and they can have a greater influence in community affairs.

This argument is particularly relevant to the discussion of the access to economic resource variables used in this study because it is not enough to look at gender educational difference or whether the woman is working and earning a wage in order to describe her as an empowered person. However, it is *control* over these resources that is more important (Kabeer, 1999). The approach to using economic resources as an indicator is best for measuring women's empowerment due to the fact that access to economic resources determines women's level of bargaining power or decision-making. For women to make an impact in succeeding and making advancement economically, they need power and agency to benefit from economic resources. Making sure women receive equal access to education and paid work makes empowering of

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women accelerate progress toward gender equity, and may translate into improved national economic efficiency (Razavi, 2012).

3.2.1.2 Gender Educational Difference

The role of gender educational difference as an indicator is to assess the status of women and gender fairness. It can be argued that women's educational increase is associated with significant improvements in child health and the possibility of utilising reproductive health services. Studies done by (Jejeebhoy, 1995 and Beegle et al., 2001) indicated that a woman's education increases her exposure and knowledge to the outside world and also increases her decision-making power.

More so, women who are more educated than their husbands face fewer constraints in physical mobility and violence. Their study further showed that women's education normally increases their economic independence and improves access to and control over economic resources. It is further discussed that the magnitude of the association between reproductive health outcomes and female education is generally higher than the corresponding association with partner's education. Women's education is more likely to influence their children as compared to their spouse in terms of securing more resources (Akmam, 2002). Another study by Becker (1997) in Zimbabwe revealed that education increases the likelihood that women will look after their own well-being and that of their family.

3.2.1.3 Whether the Woman is working

The literature indicates that steady, well-paid work has a positive effect on women's lives, while informal, low-paying work does not (Acharya and Bennet, 1982). Women who engaged in paid

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work have the potential of shifting the balance of power within the household. When women are working and they are paid, they presumably have a greater ability to take care of themselves and they are, therefore, less dependent on their husbands or others for survival. Women's ability to bargain within the household will also increase not only because they have more to offer the household, but because they have a fallback position. According to studies by Kabeer (2001), the effect of microcredit in societies where women have traditionally been excluded from cash economy have found women's access to credit resulting in a number of positive changes in women's own perception of themselves and their increased role in household decision-making.

3.2.2 Social Norms

Social norms are distinctive patterns of customs, traditions, beliefs and ideas which characterise the way of life and relations of a society or groups within a community or the larger society (Deaton &Dreze 2002). These social norms can also influence access and control over economic resources and determine women's reproductive rights, responsibilities and participation in the decision-making process (Grown et al., 2005). These social norms sometimes reinforce male power and the idea of women's inferiority, for instance, women's acceptance of violence against them. These normative values in the society prescribe the powers of men over women and may reflect an acceptance of unequal gender roles. Therefore, women who accept as justifiable husbands' control over their lives can be considered to be less empowered as compared to those who reject control over them by husbands (Sen and Batliwala, 2000).

Even though such normative values do not necessarily imply approval of these rights for men, they sometimes signify passive acceptance of norms that give men these rights over women and contribute to the low status of women. There are varieties of ways of measuring social norms in

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the development literature, for instance, women's mobility in the public domain in regions where female seclusion is a norm (Kabeer, 2012). However, this study restricts the discussion of measures of social norms in association to women's empowerment with proxy variables captured by the 2008 Ghana DHS dataset, which include; household decision-making, acceptance of violence against women and women's autonomy. These components of social norms are sub discussed below.

3.2.3 Women's Decision-Making

Women's decision-making occurs at different aspects of their lives as an important indicator of power relations, especially as discovered through the sharing of gender roles within the household. This present study measures women's decision-making by using the 2008 Ghana DHS dataset and is based on whether the woman has significant say concerning: her own health care, large household purchases, purchases for daily household needs and visits to families or relatives. The indicator of decision-making clarifies who usually makes the decision in the household, and whether the respondent could have an influence on the decision if he or she wished. Answering this question, by the respondent shows the existence of choice in the household and the actual use of the choice. Women's decision-making at the household is often used as an indicator of women's empowerment.

With regards to decision-making in the home and control from male partners, studies have shown that women have relatively limited decision-making power. For instance, Malhotra et al., (2002) recognised participation in domestic decision-making as an indicator in the familial and interpersonal domain. Similarly, Malhotra and Schular, (2005) identified *domestic decision-making* as an indicator at the household level within the social and cultural dimension of

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empowerment. Furthermore, Jejeebhoy, (1995) also acknowledged *decision-making economy* as one dimension of empowerment. From the above discussion on decision-making by the various authors, one would realize that the indicators are varied, showing how essential it is for women's empowerment. The empirical evidence showed that the indicators have been used in different countries such as: Egypt by Kishor (2000), in Zimbabwe by Hindin (2000) and in Bangladesh by Kabeer in (1997). The use of this indicator in different geographical locations recommends its international comparability. The participation of women's in decision-making from the empirical studies within the household revealed it is crucial for women's well-being. Decision making as a proxy for women's empowerment is used to capture women's relative status in their household or community. Ghuman (2003) used decision-making power related to household or economic affairs, but looked at whether the woman had the *greatest say* over the decision to work outside the home and whether if she had the *greatest say* about purchasing major household goods, as well as her freedom to buy herself a small item of jewelry or a dress.

3.2.4 Acceptance of Wife Beating

One important aspect of female empowerment is the refusal of domestic or marital violence (Mahmud et al., 2012).Domestic violence against women has received growing attention worldwide, and it is considered not only as a violation of fundamental human rights, but also as a burden leading to considerable health and demographic damage (e.g. Sobkoviak et al., 2012).Violence against women can be analyzed by focusing on whether women consider marital violence to be acceptable within their households, or against women in society in general. The knowledge of women's attitudes on wife beating is fundamental to see how women perceive the status of their gender in society. This study measures acceptance of wife beating using the 2008

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Ghana DHS dataset, which includes: beating of wife if she goes out without permission, neglects the children, argues with the husband, refuses sex with husband and even if she burns the food. Women's acceptance of wife beating may serve as a barrier for them in accessing health care for themselves and their children. Hindin (2003) notes that, women's attitudes can serve as a marker for the social acceptability of wife beating.

Using a perception measure of whether wife beating can be justified provides insights into women's views of their situation in society. The function of this perception as a proxy for empowerment has a number of advantages. Views about wife beating may be easier to elicit via surveys rather than the women's own experiences, which may be subject to misreporting for social-judgment reasons (Amoakohene, 2004). According to Kishor, (2006), knowing whether a woman has or has not experienced intimate partner violence should tell us something about the ability of her household to promote her empowerment. Acceptance of wife beating is supposed to be established by a patriarchal order that gives primacy and privilege to men (Amoakohene, 2004; Kishor and Subaiya, 2008), and "serves to sustain the unequal balance of power" between human races and women (Watts and Zimmerman, 2002; Wilson-Williams *et al.*, 2008).

3.2.5 Women's Autonomy

In most studies autonomy has been explained as the capability to control one's personal environment through control over resources and information in order to reach conclusions about one's own concerns or about close family members (Basu, 1992). This requires an individual's capability and freedom to move independently of the potency of others. Women's autonomy can be conceived as the power to create and execute independent decisions pertaining to personal matters of importance to their lives or their kin, although men and other people may be a fought

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to their wishes (Mason 1995).With regards to autonomy, which is another aspect of social norms, people become autonomous when they act in accord with their integrated values or interest (Ryan and Deci, 2000). This study defines women's autonomy as women's having control over access to economic resource, their reproductive lives, and independence in freedom of movement and ability to have an equitable power relationship within the household.

This study employs three measures to act as a proxy for women's autonomy using three response options from the 2008 Ghana DHS. The measure of autonomy is based on: whether it is problematic for women to seek permission when going for medical help, concern no female provider at the health facility and not wanting to go alone. A study by Kishor (2000) found women's autonomy to be an important explanatory factor in child survival and child health in the Egypt net of other bio-demographic and socioeconomic influences. Based on South Asian cultural context, the majority of the literature focused on physical mobility and control of decision-making within and outside the home as meaningful indicators of female autonomy. These indicators were valuable because a few elementary questions on this in small and large surveys were able to find a measure of female autonomy. They were also self-justifying because they were expressed in these empirical studies to have an association with reproductive health. These connections were often at the individual level (Jejeebhoy, 1995) as well as at the community level (Mason and Smith, 2000). Various inquiries have revealed that promotion of women's freedom of movement is necessary to make them capable of shifting their attitude, realizing their own choices to improve their health conditions and to bring down poverty. According to Parveen and Leonhauser (2004), the lack of women's physical mobility deprives them of getting better livelihood opportunities.

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3.3 Empirical Literature

3.3.1 Access to Economic Resources and Utilisation of Reproductive Health Services.

Previous empirical literature on women's empowerment and the use of reproductive health services has concentrated on Asia context with few studies on Africa and Sub-Saharan Africa context. Work done by Agboolah, (2009), using employment as a measure of women's empowerment found employment to have a positive effect on maternal health and to be associated with reduced maternal mortality and morbidity. On the other hand unemployed women were found to be more than four times as likely to die from causes related to pregnancy and childbirth as compared to those who were employed. Employment as used by the study is widely accepted and conforms to what has been found in the literature, because if they are employed and can have control over income they earned, women are better able to make their own health care decisions. In other studies, Simkhada et al., (2008) also used women's paid work to examine its effect on use of antenatal care. Their findings revealed that paid work was a statistically significant factor in the use of antenatal care in seven of the twenty eight (28) studies they reviewed.

This study also confirms what has earlier been discussed as if women have control over cash earned it serves as a fallback position for women. Beegle, Frankenberg, and Thomas (2001) using the Indonesia Family Survey, examined how bargaining power within couples as a measure of empowerment affects the use of prenatal and delivery care. Their result indicated that, a woman's control over resources affects the couple's decision-making and it was also evident from their studies that women's influence on use of prenatal and delivery care varies if a woman is better educated than her husband. It is believed that if women are better educated than

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their husband they gain more information and knowledge about reproductive health services and turn to increase their utilisation. Women who are also more educated than their husband may gain more power and their views about utilizing reproductive health are accepted by their partners.Work also done by Mosiuret al., (2008) in Chapai Nawabganj District in Bangladesh showed women's occupation, husband's education and per-capita yearly income all have significant effect on medical check-up during pregnancy. Their study showed women's economic empowerment has significant effect on utilisation of reproductive health. The study area was a patriarchal society; therefore if women's economic power has a significant association with medical check-up during pregnancy then the women might have had a great control over these economic resources.

According to Chakraborty et al., (2003), women who are involved in gainful work are more likely to use modern health care services to treat complications during their pregnancy. This finding is also useful, but it discussed about only gainful work and neglects whether the women were paid in cash or in kind. When women are working and they are paid, it serves as a source of economic power for them, which they could fall on in case of pregnancy complications that involved cost. Gill et al., (2007) said educated women are more likely than uneducated women to use antenatal care, delivery, and postnatal care while Grown et al., (2005) concluded that Secondary education improvements for girls' may be more effective in improving health access, reducing gender equality, and empowering women than primary education in countries where girls face discrimination. More so, Puskar, (2003) also examined the relationship between the status of women in the household and the demand for prenatal care and hospital delivery and child mortality in India. The findings showed that, a woman's education has a stronger effect on health care usage relative to that of the husband and a woman's control over household resources

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(i.e. ability to keep money aside) has a significant effect on prenatal care and hospital delivery which significantly reduces mother and child mortality. If women set money aside and they do not have control over them it could have an effect on reproductive health care in emergency situation which may demand cost.

Another study done by Becker in Zimbabwe (Africa) in (1997) found out that education and paid work were more likely to increase women's accessing contraceptive use and antenatal care. However, from their findings, earlier discussion showed that contraceptive use and antenatal care are not the only reproductive health issues that confront women; one would have expected the inclusion of health facility delivery which equally has an adverse effect on maternal death. In another study, Bbaale & Mpuga (2011) used 2006 Uganda Demographic and Health Survey, to examine the relationship between female education and contraceptive use as well as fertility rates in Uganda. Their result showed that female education, especially at the secondary school and post-secondary levels, increases the likelihood of using contraceptives and reduces fertility. In another study done in rural Nigeria,(Sub Saharan-Africa) examining women education and health facility delivery showed that women who were not educated preferred not to deliver in health facility because of poor treatment they received from the hands of health workers, a treatment which was not given to women who were more educated (Jejeebhoy, 1995).

Do and Kurimoto (2012) also used 2008 Ghana Demographic and Health Survey to examine dimensions of household economic decision making and choice of contraceptive method in selected African countries which include: Namibia, Zambia, Ghana and Uganda. Their findings in Ghana revealed that the use of female methods was associated with household economic decision-making. The dimension of household economic variables used in the study include: women's income contribution relative to husband, decision about major and daily household

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purchases. However, their study ignored other reproductive health care services such as antenatal care visits during the first trimester, skilled birth delivery and place of delivery. This current study will fill the gap by including all the other reproductive health services discussed earlier.

Work done by Chrissman et al., (2012) in Ghana, observed that women's sexual empowerment, which was explained as their power to decide on sexual actions in relationships, was strongly associated with contraceptive use. However, Chrissman et al., (2012) did not show whether the differences in levels of education were relevant to the extent to which women are empowered. However, this study will use them as part of social norms as it is used to capture whether the decision is routine or to tap into the level of status given to women to act on their own. From the empirical research discussed above, one would realize that, the empowerment variables such as education, income, employment and others were used separately in the studies reviewed, however this current study will index the variables of access to economic resources into one single variable to be called economic power.

3.4 Social Norms and Utilisation of Reproductive Health Services

The empirical literature on social norms and reproductive health is sub grouped into three components of decision-making, acceptance of wife beating and women's autonomy.

3.4.1 Decision-Making and Utilisation of Reproductive Health Care Services

Women's report of decision-making power was significantly related to household having a plan for what to do in case of maternal emergency, but was not correlated with place of delivery (Becker et al., 2006). A woman's decision-making in the household increases their status in the society as earlier discussed. Another study was also conducted in Pakistan by Hou and Ma,

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(2011), using Pakistan Social and Living Survey to examine whether women's decision-making power is related to reproductive health up-take. Their findings showed that women's decision-making power has a significant positive association with reproductive health uptake (prenatal, institutional birth, skilled birth attendance and postnatal care) and that influential males' decision-making power has the opposite effect after controlling for socio-economic indicators. From their work it has been shown that empowering women and increasing their decision-making power may increase their up-take on reproductive health services. Another study by Becker, Fonseca-Beckerb and Schenck-Yglesias (2006) in Western Guatemala examined the effect of women's report of decision-making power on reproductive health. Their study revealed that, women's report of their decision-making power was significantly related to the household having a plan for what to do in case of a maternal emergency, however, it was not associated with place of childbirth while husband's reports of the wife's decision-making power were negatively associated with the likelihood of having the last birth in a health facility. A study by Mason and Smith (2000), showed that men in highly gender-stratified societies tend to control their wives' use of contraceptives. Another study in Honduras found a significant number of women agreeing that decisions about fertility and contraceptive use should be taken solely by men (Speizer, Whittle and Carter, 2005).

3.4.2 Acceptance of Wife Beating and Utilisation of Reproductive Health

A study conducted in Albania by using bivariate and multivariate analysis based on data from Albania DHS showed that decision-making and attitude of women towards domestic violence has a positive influence on antenatal visits and post-natal care after controlling for a number of socio-economic and demographic factors which are organized at individual, household, and

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community level (Lantona et al., 2014). While commending these writers one would have expected the addition of skilled birth and place of delivery to the dependent variables since they equally have an adverse effect on maternal health. However, this current study will fill this gap by adding three more variables which are important in reducing maternal death. A study done by Diop-Sidibé et al. (2006) using 1995 Egyptian Demographic and Health Survey showed that high frequency of wife beating was associated with non-use of the female reproductive method, while antenatal care was less likely among ever-beaten women.

3.4.3 Autonomy and Utilisation of Reproductive Health Services

Empowered women, particularly those who are more autonomous, have increased pregnancy health care seeking (Haque et al., 2012), are more likely to have skilled delivery attendance (Fotso et al., 2009), utilise modern contraceptive methods (Chrisman et al., 2012), and have lower infant mortality (Adhikari and Sawangdee, 2011). A study in Uttar Pradesh in North India showed that women's autonomy is the major determinant of maternal health care utilisation (Bloom et al., 2001). These authors showed that women with greater freedom of movement are more likely to receive antenatal care and use delivery care and suggested that women's autonomy is as equally important as educational and economic characteristics. Women's reproductive health-seeking behaviour was found to be associated positively with freedom of movement and decision-making power in South India, but these effects were reduced when confounding factors were taken into account (Bhatia and Cleland 1995b).

Using data from Zimbabwe, Zambia and Malawi, Hindin (2005) showed that women with lower autonomy in household decision-making were at an increased risk of having chronic energy deficiency in Zambia and Malawi, but not in Zimbabwe. A study by Kishor (2000) found

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women's autonomy to be an important explanatory factor in child survival and child health in Egypt net of other bio-demographic and socio- economic influences.

3.5 Socio-Demographic Variables and Utilisation of Reproductive Health Services

Apart from the social norms and access to economic resources that have an influence on reproductive health, there are other important demographic variables that affect reproductive health. The use of demographic variables as controls were selected based on the frameworks which were utilised in the literature (Fan and Habibov, 2009). Thus, control variables selected comprise: age of the woman, woman's age squared, women's education, wealth quintile, and accessibility, number of living children and availability of services.

3.5.1 Women's Age

Age of the mother may also affect her use of reproductive health services. Empirical studies on the use of age as controls present mixed evidence. For instance Chandhioket al., (2006) and Henze (2004), found a reduction in the proportion of women obtaining ANC services with increasing age in India and Honduras respectively. Thus, the influence of age on the use of maternal health cannot be determined prior to investigation. Studies in Nepal and Bangladesh revealed that as women get older they gain autonomy in household decision making (Senarath & Gunawardena, 2009). The current age of the woman is a relevant determinant of the utilisation of medical services (Elo, 1992 &Fosu, 1994). According to Abor and Gordon-Abekah (2014), the age of women could be used as a proxy for women's accumulated knowledge of health care services, which may have a positive influence on the use of reproductive health services. Studies have supported the view that older women are more likely to seek maternal health care services

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than younger women (Addai, 2000; Chakraborty et al., 2003; Mekonnen & Mekonnen, 2003). From this discussion, older women gain more experience with increased number of maternal healthcare utilisation; therefore they have the experienced of more utilisation of reproductive health care services.

3.5.2 Residency

In Ethiopia and other countries of the world, the use of residency as a controlvariable showed that women in the urban setting had more knowledge and power to make decisions and utilise reproductive health services as compared to those in the rural settings (Bogale, Wondafrash, Tilahun and Girma, 2010; Kishor, &Subaiya, 2008). These outcomes could be linked to the fact that those in urban settings are more exposed to knowledge about modern contraceptive, gender equitable attitude and a better chance of involvement in decision making among other favourable conditions (Bogale et al., 2010). According to Abor et al., (2011) place of residence (rural or urban) may also affect the utilisation of maternal health services. In most developing countries, urban dwellers may be relatively closer to health facilities than their rural counterparts, increasing the distance from home to a health facility for rural dwellers as compared to those living in urban centers. A number of previous studies have shown that thphysical proximity of health care services, especially in developing nation's context, plays an important role in utilisation of these services (Stock, 1983). Rahaman et al., (1982) for instance, found that geographical distance is one of the most important determinants of health care service utilisation in rural areas in Bangladesh. Place of residence was included in another study in southern India by Navaneetham & Dharmalingam (2002) in which it was argued that women living in the urban areas have more dominant urban culture and more pressure to behave in ways perceived to be

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modern. Similarly in Turkish study, Celik and Hothkiss (2000) concluded that living in urban areas was found to have a positive effect on the probability of using trained professionals for birth deliveries.

3.5.3 Geographical Location

Geographic region is also another factor that has been used as a control variable in the literature. Geographical location may affect the utilisation of maternal health services. In many developing countries regions and provinces may have varying shares of national resources. In such circumstances, it is possible for different geographical regions to be differently endowed with health infrastructure and personnel and thereby influencing access and utilisation (Abor & Abekah-Nkrumah et al., 2014). In the findings of Addai (2000) on the determinants of the use of maternal and child health services in rural Ghana, it was evidenced that living in Western/Central regions increased the likelihood of consulting a doctor for prenatal care among rural residents. He continued to argue that, compared to the Northern/Upper region, women residing in rural areas of Western/Central regions were almost twice as likely to see a doctor for prenatal care. Addai argued that region could be related to the ease of access to health facilities and personnel among women living in rural areas of Western/Central regions. Addai (2000) concluded that women from the Eastern/Ashanti/Brong Ahafo regions had a higher chance of hospital delivery as compared with the reference group.

3.5.4 Religion

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Religious background is also another factor argued by many scholars as influencing the utilisation of maternal health services. Similar studies have shown that religion is an important determinant of maternal health care utilisation (Nhindiri et al., 1995). Also in a Ghanaian study, Addai (2000) analyzed that religion was one of the main predictors of antenatal check-ups. Addai discovered that Roman Catholics tend to have a higher likelihood of seeking antenatal check-ups as compared to the reference group, Muslim; the opposite is true for women of traditional religions. Navaneetham & Dharmalingam (2001) found that the use of maternal health care services is likely to vary between religious groups due to differences in their cultural practices and beliefs. In their report, it was observed that Muslim women are less likely to go for antenatal check-up and seek delivery assistance if a male doctor is available in a health facility. They argued that Christian women, on the other hand, are more likely to use modern health care services because they are more open to accepting new ideas.

3.5.5 Ethnicity

Ethnicity is also another factor found by prior empirical studies as influencing utilisation of maternal health care services (Gobindasamy and Ramesh, 1997). Different ethnic groups may exhibit different culture, values and belief systems which invariably may affect behavior and therefore perception as well as the use of health services. Celik and Hotchkiss (2000) also found ethnicity as an important determinant of utilisation of health services. Ekman et al., (2007) also found ethnicity as a strong and robust factor influencing maternal health care use in Vietnam. From their results they argued that belonging to the ethnic majority group determines the utilisation of service in a positive significant way.

3.5.6 Availability of Services

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Women living in Ghanaian communities where less value is placed on women's well-being than men's, may find that reproductive health services for women are not available. This is a constraint to women's desire to provide adequate care for them. Women may receive less respect than men and face greater risk of spousal violence, or be treated as intellectually inferior to men when they come into contact with people, groups, and institutions outside of their homes. They may find that health services for female-specific needs, such as reproductive health needs, are not available. More fundamentally, norms and customs governing social behavior mean that some alternatives are not even considered in the domain of choice for women. They do not conceive to be within the realm of possibility. These differences between women and men as social groups are rooted in unequal power relations between them (Kabeer, 1999). The control of women's and girls' sexuality and reproduction is at unequal gender relations and is central to the denial of equality and self-determination of women (Sen and Batliwala, 2000). Because governments place low priority on the availability of health services, they may be lacking as there is a lack of demand for them within the community. The inability to provide such services is a manifestation of women's lack of reproductive and sexual rights and the lower power of women relative to men as a social group.

3.5.7 Accessibility

Accessibility of health services has been shown to be an important determinant of utilisation of health services in developing countries. In most rural areas in Africa, one in three women lives more than five kilometers from the nearest health facility (World Bank, 1994b). The scarcity of vehicles, especially in remote areas, and poor road conditions can make it extremely difficult for women to reach even relatively nearby facilities. Walking is the primary mode of transportation,

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even for women in labour (World Bank, 1994b). In rural Tanzania, for example, 84 percent of women who gave birth at home intended to deliver at a health facility, but did not due to distance and lack of transportation (Bicego et al., 1997). Fees reduce women's use of maternal health services and keep millions of women from having hospital-based deliveries or from seeking care even when complications arise.

With regard to health care access, there is continual disparity between urban and rural areas, and especially within the three Northern Regions, Volta, the Western and the Southern part of Ghana. Despite the fact that the majority of Ghana's population lives in the rural areas, about (70 %), health care facilities, as well as qualified health care personnel such as doctors and nurses and other medical specialists, remain concentrated in urban areas (Heyen-Perschon 2005).

3.6 Conclusion

In this chapter, conceptualizing women empowerment and reproductive health care services have been discussed. The empirical literature between the relationship and reproductive health care utilisation has also been discussed.

INTEGRI PROCEDAMUS

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CHAPTER FOUR

METHODOLOGY

4.0 Introduction

This section describes the research approach adopted, the ethical issues concerning the use of the 2008 Ghana DHS dataset, the source of data, study design, how the variables were measured and the estimation strategy employed. More so, Socio-Economic variables were also included to serve as controls in the final regression. These, variables were selected based on the conceptual framework and prior empirical studies already discussed.

4.1 Research Paradigm

The study adopts a critical realist approach, a philosophy of science to this inquiry. Several studies have argued for the importance of critical realism of philosophical underpinning for research in social sciences in general (Miles & Huberman, 1994 George & Bennett, 2005) as well as economics, organizational, management research, education, health and social work. From the view of the critical realist, there is reality - unobservable structures - which exists independent of human thought. The critical realists believe that the unobservable structures cause observable events. Therefore, the social world can be understood only if people understand the structures that generate events. In this respect, critical realism differs from empiricism (the view that knowledge derives from experience of the world). In social sciences research, this distinction conditions this current analysis: how real is social reality, and how it can best be studied, for instance the complex multidimensionality of access to economic resources and social norms associated with empowerment and its effect on reproductive health services. In the study

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of women's empowerment and association with reproductive health, the objects of inquiry are empirical events. The assumption of this discussion is that events are not transparent, and in some instances require more than description.

Critical realist thus assumes an ontological realism (there exists a mind-independent reality and truth is correspondent with fact) and defends the possibility of causal explanation, but also accepts the hermeneutic notion that knowledge is communicatively constructed, that our concepts and beliefs are historically generated and conditioned, and that the explanatory knowledge produced through realist analysis will always be open to challenge and subject to change on theoretical and empirical grounds. Critical realism is as much against totalization as relativism. In the direction of a critical realist, all knowledge is fallible, but not equally fallible. The realist method is basically a posteriori in that given the total reproduction of knowledge; a critical realist seeks to reconstruct causal structures and their properties on the basis of constant reflections essential critique. Causal mechanisms are thus historical and contextual in their realization. The realist method must abstract a posteriori causal mechanisms and stipulate their contextual circumstances. Abstraction is a central and necessary tool in the realist method for several reasons (Lawson, 1989). To begin with, it is practically adequate method to mirror social structures and generative mechanism. In addition, abstraction also serves as a first sound step towards conceptualizing and theorizing the real essence, power, and mechanism of an object (Miles & Huberman, 1994). The orientation of this study following from the critical realist approach is thus quantitative. This is because the positivist approach allows objective realities to be examined independently of the researcher's idiosyncrasies. The use of the quantitative approach allows rigor to be introduced into the assessment of reality, as reality is questioned with the critical realist belief in the fallibility of knowledge. Though the phenomenological approach

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would have been worthwhile as an additional method in this inquiry however, timeframe allowed for this research does not make it feasible. That notwithstanding, the rigor involved in the quantitative methods being used are such that the elements of subjectivity are minimized.

4.2 Ethical Issues

The study used secondary data from the Ghana Demographic and Health Surveys, 2008 (Ghana Statistical Service et al. 2009). Since the dataset obtained from the Ghana DHS has already been collected and ethically approved for research work, there was no need for me to fulfill any ethical obligations for collecting primary data. The Ghana DHS has a highly recognized pool of data which fulfills all the main ethical issues in research (Ghana Statistical Service (GSS) et al., 2009). The data are internationally approved for research and academics purposes. However, the researcher has the obligation to follow the ethical consideration under which permission was granted and the data released through Demographic and Health Survey data set. Accordingly, the ethical consideration has been followed and strictly adhered to by the researcher.

4.3 Study Design

The study design selected was a quantitative research. The study used a secondary data from the 2008 Ghana Demographic and Health Surveys dataset. Based on this, gathering of primary data was not needed from the field. The availability of high quality data from the 2008 GDHS provided a wide sample size and an advantage for conducting a quantitative study. Stata was used to run various analyses. This aided to discover the problem of women's empowerment and present or future use of reproductive health services in a different light which the qualitative approach may not have covered. The sample size also makes the findings more acceptable to be

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comprehensive. Probit Regression analysis was the main means of discovering the associations between variables in the study. According to Cresswel & Clark (2007), aside the strengths that quantitative research design possess there are also some limitations when using it to conduct a study, some of which include:

- Getting secondary data for a quantitative research design is not easily available or sometimes extremely difficult to obtain.
- Quantitative research design may not be powerful to explain complex issues.
- Sometimes the information obtained from the questionnaire may not be accurate or it is sometimes incomplete.
- The research cannot be modified once the study begins making the research methods inflexible.
- The coding of data in other words its conversion to numbers may result in information to be lost.
- It is difficult to use quantitative data to obtain information on groups that are difficult to reach.
- It is very expensive and time-consuming to conduct quantitative research what even compounds the problem is the fact that preliminary results are not available for a long time.

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4.4 Data Source

In this section the source of data which is 2008 Ghana DHS is discussed.

4.4.1 Background

The data for the study is drawn from Demographic and Health Survey (DHS) conducted in Ghana in 2008. The (GDHS) 2008 is the fifth nationwide population and health survey, which was conducted in Ghana as part of global Demographic and Health surveys (DHS). Started in 1988, the DHS has been conducted in the country every five years and gives information on the trends of issues on population and health in the country. The Ghana Statistical Service (GSS) carried out the survey in collaboration with the Ghana Health Service (GHS) under the auspices of ICF Macro and ICF International Company who provided technical support through the MEASURE DHS program. It is part of the worldwide Demographic and Health Surveys project, which assist countries in gathering and usage of data to monitor population, health and nutrition programs. The main aim of the DHS survey is to provide decision-makers in most developing countries, with valuable information needed for making informed policy choices. This will help increase the international population and health database, improve survey methodology and develop the skills and resources essential to conduct high quality demographic and health surveys in participating countries (Ghana Statistical Service (GSS) et al., 2009). The GDHS dataset used for the study provided very high quality data on health issues in Ghana over the years. The data collection is globally accepted as the analysis and reports are of high standard. Training was given to the field workers who collected the data (Ghana Statistical Service (GSS) et al., 2009). There was 99 percent response rate from the participants for the entire survey. Female accounted for 97 percent response rate and 96 percent response rate for male (Ghana

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Statistical Service (GSS) et al., 2009). The data were collected throughout Ghana within a period of three months, thus from the beginning of September to the end of November 2008 (Ghana Statistical Service (GSS) et al., 2009).

4.4.2 Sampling Strategy

The 2008 GDHS dataset is nationally representative and it is based on a two-stage probability sampling technique. The first stage includes dividing Ghana into ten regions and each of the regions again divided into urban and rural areas. Using the 2000 population census sampling frame, 412 clusters were selected from each region in a situation that shows the urban and rural divide and proportional to the size of the ten regions. This is carried out using systematic sampling with probability proportional to size. At the second stage, households were selected from the clusters using systematic sampling with equal probability. A sample size of 12,323 households were selected throughout the country, but a total of 11, 778 households were interviewed, with 5,096 eligible women being identified for interviews, of which 4,916 women successfully completed the interviews while 6,141 were men. Women aged 15-49 years were interviewed from the selected household. Furthermore, men aged 15-59 years were also interviewed (GSS et al., 2009). The main sample for this study is the 4,916 eligible women who were interviewed. The analysis for this study focuses on women who had at least one birth in the three years prior to the survey. For women who had more than one birth, only utilisation behaviour associated with the recent pregnancy was considered. The reason for including only women who gave birth during the three-year period is that mothers may not be able to accurately answer questions about births that occurred prior to this interval (Ghana Statistical Service (GSS) et al., 2009).

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The survey collected information on demographics as well as marriage, sexual activity, fertility preferences, nutritional status of women and children, maternal and child health and many others. In addition, the 2008 DHS Survey collected information on women's decision-making, domestic violence and anthropometric measurements for women and children (Ghana Statistical Service (GSS) et al., 2009). However, information collected by the GDHS relevant to the study includes; background characteristics of women and their husbands or partners, contraceptive use, timing of first antenatal visits, skilled delivery, and place of delivery, information on women's empowerment and health outcomes.

4.5 Variables Definition and Measurement

In this section the dependent and other independent variables used by this study are discussed. The measures needed to answer the research hypothesis were described in connection with the conceptual framework earlier on discussed in this study. Approximately, background or contextual variables were drawn from the variables available in the dataset. These variables were analysed and statistical relation such as: rank correlation coefficients, Kendall tau b and Principal Component Analysis to show their relationships. In applicable cases some of the variables were put together to form scales of relevant concepts.

4.5.1 Dependent Variables (Reproductive Health Services) and their Measurements

For the purpose of this study, contraceptive use, timing of first antenatal visits, skilled attendance at birth and health facility delivery were used as indicators of reproductive health services (dependent variables).

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4.5.2 Contraceptive Use

In the survey, the contraceptive use question captures the type of contraceptive methods used by women, with the answers being: not using, pill, IUD, injections, diaphragm, condom, female sterilization, periodic abstinence, withdrawal, Norplant, female condom, foam or jelly and others. The answers were recoded into a dummy where modern contraceptive method is 1 and traditional and all other methods were coded 0. The items that form modern contraceptives include: (pill, IUD, injections, diaphragm, condom, female sterilization, Norplant, female condom, foaming tablet and jelly). People who were not using any method were considered as using traditional methods because periodic abstinence, withdrawal and others were equally not effective and scientific.

The reason to recode contraceptive use into modern and traditional methods is on the basis that modern contraceptive use is effective in preventing unwanted pregnancy, birth spacing and aid in reducing high fertility. Greater use of contraception is inversely related to lower total fertility rates, leads to a reduction in maternal and child mortality, and greater access to health care services. It is an essential right for women and men to plan their family size and space births (Do and Kurimoto, 2012). According to Campbell and Graham (2006), contraceptive use as a form of family planning plays a key role in reducing maternal deaths, checking high-risk pregnancies in terms of maternal mortality, specifically high parity births, births by very young or older women and unwanted pregnancies. According to (Bongaarts et al., 2012), access to modern contraceptive methods can avert 22 to 30 percent of maternal deaths. Avoiding unintended pregnancy can also reduce the number of complications suffered by women during pregnancies (Feldman et al., 2009).

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4.5.3 Timing of First Antenatal Visits

Timing of first antenatal visits measures the frequency of visits during the first trimester of pregnancy by the expectant mother. Many of these deaths could have been prevented if the pregnant woman had the full antenatal care during the first trimester. Proper care in time of pregnancy and childbirth is essential to the health of the mother and child. Antenatal care visits have great benefits in preventing adverse effect when it is sought early during the time of pregnancy (Villar et al., 2001). Additionally, antenatal visits during the first trimester facilitate early detection and treatment of problems during pregnancy and provide an opportunity to inform women, and their families, about their health and danger signs associated with a pregnancy (Ghana Statistical Service (GSS) et al., 2009).

Information on the timing of first antenatal visits is relevant in identifying subgroups of women who do not use such services and it is important in planning improvement in the services. During antenatal visit screening is done to identify complications and advice is given on a range of maternity related issues. Periodic antenatal check-up at the time of pregnancy are necessary to establish confidence between women and health care providers to manage any obstetric complications or risk factors (WHO, 2002). Timing of first antenatal visits is important in detecting and preventing adverse pregnancy outcomes. Care is most efficient if the visits begin early during pregnancy. The researcher ascertains from the dataset whether first antenatal check-up was obtained during the first trimester. The survey captures timing of first antenatal care in a continuous form. According to the World Health Organisation (WHO) at least one antenatal visit during the first trimester is deemed protected from obstetric complications and related risk

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(WHO, 2002). Antenatal care during the first trimester is important as it helps health workers to identify pregnant women who are at risk for complications, so as to help prevent problems before they occur. Antenatal care visits entail visits to a professional health care worker, example, a medical doctor, a nurse, midwife or village health worker. Timing of first antenatal visits also provides an indication of access to health care centers. For this study, the timing of antenatal visit during the first trimester is coded 1 for all women who have their visit in the first trimester else 0.

4.5.4 Skilled Birth Attendance

Assistance at delivery measures assistance at birth by a health worker. The data on assistance at birth by a health worker (medical doctor, a nurse, midwife, and community health nurse or village health worker) was recoded into binary. However, Ghana's Health Service's standard protocols do not recognize traditional birth attendants (TBA's) because health facilities being public or private are likely to have the requisite equipment, as well as trained personnel to handle emergency obstetric complications. According (WHO, 2004), traditional birth attendants, trained or untrained are not considered skilled birth attendants. Labour and delivery by women is the shortest and often most critical period of pregnancy because most maternal deaths may arise as a result of complications during this time. Although women may attend antenatal care during the first trimester and have the best possible care, any delivery can become complicated; therefore, skilled birth assistance is essential during delivery. In Ghana, the introduction of free maternity service and the location of Community Health Improvements Services (CHIPS) compounds closer to the community have been made to remove barriers such as cost of service, distance to the facility and quality to accessing skilled birth attendants. This indicator is chosen based on the

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fact that having a skilled health worker at delivery has a strong and direct relationship to the reduction of maternal mortality (Amankwaah, 2009). Assistance at delivery by skilled health personnel is needed to manage normal (uncomplicated) pregnancies, childbirth, immediate postnatal period and referral for complications of women and babies (WHO, 2004). Thus, having used a skilled birth attendant during delivery was coded as "1" and all other women not using skilled birth attendants and traditional birth attendants during delivery were coded as "0".

4 .5.5 Place of Delivery

The place of delivery variable measures the place where a woman's last birth preceding the survey occurred. The response options to this question include: delivering in government or private hospital, maternity home, other public sectors and home. The place of delivery is a key determinant for reducing the risk of maternal and child death. Traditionally, in Ghanaian society, children are delivered at home with the help of birth attendants or elderly women in the community. It is important to make an effort to reduce the health risks of mothers and children by increasing the proportion of babies delivered under medical supervision. Therefore, not delivering in a health facility under proper medical supervision and hygienic conditions can lead to serious illness or death of both mother and the baby (WHO, 2005). Women who delivered at health facility were categorized as "1" and all other women who delivered at home were coded "0".

4.6 Women's Empowerment

In this section the main independent variables used in the study are discussed and how it was measured. The 2008 Ghana Demographic and Health Survey (GDHS) collected information on

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the general background characteristics of respondents (age, education, wealth quintile, and employment status), but also information specific to women's empowerment such as receipt of cash earnings, the magnitude of a woman's earnings relative to those of her husband, and control over the use of her own earnings and those of her spouse.

The 2008 GDHS collected information on women's participation in household decision-making, the circumstances under which the respondent thinks that a woman is justified in refusing to have sexual intercourse with her husband, and her/his attitude towards wife beating. This report uses the three indices of women's empowerment developed by DHS to measure women's and men's responses to the questions. The first index is based on the number of household decisions in which the woman participates, the second is based on the respondent's opinion regarding the number of reasons that justify wife beating, and the third is based on the respondent's opinion on the number of circumstances under which a wife is justified in refusing to have sexual intercourse with her husband.

4.6.1 Descriptions of Empowerment Variables in the Ghana DHS Dataset

4.6.1.1 Access to Economic Resources

Access to economic variables as captured in the dataset include: type of earnings, gender educational differences and whether the woman was working.

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4.6.1.2 Type of Earnings

The 2008 Ghana DHS questionnaire asked about respondents type of earnings for the work they do and the response option were; "0" not paid; "1" cash only "2" cash and in-kind and "3" in-kind only. Women who are not paid measures low empowerment or having less power, those who are paid are considered to have more power, those who are paid cash and in-kind may have intermediate power and those who are paid in-kind only may also be in the intermediate section.

4.6.1.3 Whether the Woman was working

The question on women who were currently working prior to the survey was also captured as an indicator in the dataset. The response option was "0 not working and 1 working. Women who were currently working were coded 1which measures a form of higher power and those who were not working 0 which measures low form of power.

4.6.1.4 Gender Educational Differences

The level of education was considered as a resource (asset). This was measured by the "highest level of education" "educational attainment" "ever attended school" and "highest year of education completed". These were measures for both respondents and the partners. The "highest level of education" (Secondary/higher, primary, no education) was selected as the most appropriate variable education because it captured the different levels of the education system in Ghana very well. This was captured in a continuous form. This measures the educational difference between male and female. If the man is more educated than the woman, men try to suppress the women in the form making them to be submissive and it measures low empowerment. When the woman is more educated, she becomes more knowledgeable and

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enlightened therefore, not accepting being suppressed by the man which measures higher level of empowerment.

4.6.1.5 Family Decision-Making

The data for family decision making dimension asked about four areas of women's final decision-making. These were: own health care, making major household purchases, making purchases for household needs and visits to her families. Answers to the questions had five responses: "1" respondent alone; "2" respondent and husband/partner; "4" husband/partner alone; "5" someone else and "6" others. To create a binary for the analysis, this study recoded the first two responses 1-2 into "1" which measures that a woman has power and all other responses into "0"that measures how women have no say in decision-making.

4.6.1.6 Acceptance of Violence

The respondent's approval of domestic violence and partner's approval of domestic violence (husband beating wife) referred to respondent and partner's attitudes towards domestic violence and each was measured as a scale. Violence dimension is measured by five variables on women's acceptance of domestic violence in the data set. Women were asked about their opinion on whether a husband is justified in beating his wife if she; goes out without telling her husband, neglects the children, argues with her husband, refuses to have sex, or burns the food. The response options were "0" not justified and "1" justified. This study recoded the response option into those who said the reason is not justified "1" measuring a higher level of status/empowerment and those who said that the reason is justified "0" measuring a low status /empowerment.

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4.6.1.7 Women's Autonomy

Autonomy dimension was measured by three variables. From the data women were also asked about getting medical help for self; getting permission to go, concern no female provider and not wanting to go alone. The response option was "1" big problem and "2" not a big problem. This study recoded the response option into binary response, thus "0" big problem measuring low autonomy and "1" not a big problem indicating high autonomy.

4.6.2 Computation of Empowerment Sub-Indices (Independent Variables)

The aim of the empowerment sub-indices are to provide a summary measure for economic power and social norms that are related to women's empowerment or disempowerment. In the sub-index the variables are combined that are assumed to belong to either economic resource or social norms.

4.6.3 Measuring the relationship between Binary Variables

To check the relationship between the variables as most of them are discrete, rank correlation was used as a statistical technique for the measurement (Greenacre, 2007). As the condition of Pearson correlation was not fulfilled, rank correlation coefficients are useful when the data are binary. To begin with, the study tested the statistical relation between the variables. Additionally, the variables were aggregated with a reasonable weighting scheme using multivariate statistical technique. Before using Polychoric PCA, the association between the variables was tested using non-parametric test Kendall Tau b. Kendall Tau is calculated by counting the number of

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concordant and discordant pairs to two rankings, building on the difference and divides this difference by the total number of pairs. Kendall's tau-b ranges from -1.0 (all pairs disagree) to 1.0 (all pairs agree). A positive value indicates that both variables increase together. A negative value indicates that both variables decrease together. Furthermore, a value of 0 indicates independence of rankings. Kendall Tau b is a variant of Kendall tau that correlates for links, which are frequent in the case of discrete data (Agresti, 1984). Kendall Tau b was considered to be an appropriate measure of rank correlation to help in finding out whether the data for the study are related. A significant positive value of Kendall Tau b shows a sign for a positive correlation between two variables.

The formula for Kendall Tau b taking into account tied pairs is given below as:

$$\tau b = \frac{A - B}{\sqrt{\frac{n(n-1)}{2} - Tx \; \frac{n(n-1)}{2} - Ty}}$$

The concordant pairs are represented by A, B is the number of discordant pairs, the number of observations is represented by n, the number of pairs is represented by $\frac{n(n-1)}{2}$, T_x is the number of pairs tied on the variables x and T_y is the number of pairs tied on the variable y. This formula is adopted from (Agresti, 1984).

4.6.4 Kendall tau b, result of Access to Economic Resources Variables

Table 1 as indicated below shows a linear association between the variables gender educational difference, type of earnings and whether the woman was working from Kendall Tau b

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correlation. The result shows a positive association between the variables gender educational difference and type of earnings. However, there is a negative association between gender educational difference and whether the woman is working. The negative value means that lower rank on whether the woman was working is associated with lower ranks on gender educational difference. Additionally, the positive value between type of earnings and whether the woman is working means that, higher ranks on type of earnings go together with higher ranks on whether the woman was working. In all, an increase in type of earnings will lead to an increase in whether the woman was working because the two variables increase together. The p-values relate to the null hypothesis that individually, two variables are independent.

4.6.5 Kendall tau b the result of Decision-Making Variables

From Table 2, the result of Kendall Tau b for final say on own health care and final say on large household purchases shows a positive relationship between the two variables. More so, there is a positive significant association between the variables daily purchases for household needs and final say on visits to families or relatives. The positive value between the four variables shows that they are all related to each other and the variables all go together as an increase in one variable will lead to an increase in the other variables. The p-values relate to the null hypothesis that individually, the two variables are independent.

4.6.6 Kendall tau b result of Acceptance of Wife Beating Variables

From Table 3, Kendall tau b result shows that justification for beating of wife if she goes out without permission is positively associated with beating of wife if she neglects the children.

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Furthermore, beating of wife if she argues with the husband is also positively related to the beating of wife if she refuses sex with the husband. Additionally, beating of wife if she burns the food is positively associated with the other four variables. This result shows that the variables are all related to each other as an increase in one variable will result in an increase in the other variable.

4.6.7 Kendall tau b the result of Autonomy Variables

From Table 4, the result of Kendall tau b for the autonomy variables shows that seeking permission to go for medical care is positively related to concern no female provider was around when seeking for medical care. On the other hand, a woman not wanting to go alone when seeking for medical care is positively correlated with the other two variables. The result shows that: the variables permission to go for medical care, concern no female provider around and not wanting to go alone when seeking permission all increase together. The p-values relate to the null hypothesis that individually, two variables are independent.

4.6.8 Measure of Sampling Adequacy

Principal Component Analysis (PCA) requires that the Kaiser-Meyer-Olkine Measure of Sampling Adequacy (MSA) be greater than 0.50 or minimum 0.50 for each individual variable as well as the set of variables. At iteration 1, the MSA for all of the individual variables included in the analysis was greater than 0.5, supporting their retention in the analysis. In addition, the overall MSA for access to economic variables in the analysis was 50 percent which meets the minimum requirement. The overall MSA for family decision was 74 percent, which exceeds the minimum requirement. On the other hand, the overall MSA for violence variable indicate 81

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percent, which is very strong as it far exceeds the minimum value. Furthermore, the overall MSA for autonomy variables shows 53 percent, which meets the minimum requirement.

4.6.9 Aggregating Variables to form Sub-Indices of Empowerment

Principal Component Analysis (PCA) was selected as a technique for determining weights for components of empowerment index, which is similar to the construction of wealth index by Filmer and Pritchet (2001). Principal Component Analysis (PCA) is a technique of a data reduction that is valid for normal distributed variables (Jolliffe, 1986). For data reduction, the technique includes replacing a set of correlated variables with a set of uncorrelated principal components which represent unobserved characteristics of the population. The Principal Components are linear combinations of the original variables; the weights are obtained from the correlation matrix. The first principal component explains the largest proportion of the total variance. Because the data for this study is in binary form, this assumption is violated for using Pearson correlation coefficient. A simulation computation of empowerment indices was carried out to compare the various results of discrete data using PCA. The simulation result showed that currently used method of running PCA on a set of dummy variables as proposed by Filmer and Prichett (2001) does not perform as well as the use of Polychoric PCA methods for analyzing discrete data. Plolychoric PCA is more sophisticated than the standard PCA and also extracts larger variance. As shown in Table 14, the Polychoric PCA extracted more proportion of variance as compared to the standard PCA. Following, Kolenikov and Angeles (2009) {corrected) this study uses Polychoric Principal Component (PPC) to extract First Principal Component (FPC).

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Pearson and Pearson (1922) introduced the concepts of polychoric correlations as the maximum likelihood estimates of correlation between unobserved normally distributed continuous index variables underlying their discretized versions. DiStefano (2002), have looked at the effects of categorization in closely related area of structural equation modeling with latent variables. The applications of polychoric correlations in economics publications are extremely scarce, however the method is beginning to gain recognition in public health studies (Medina-Solis et al., 2006). The use of polychoric correlation being the maximum likelihood estimate is consistent, asymptotically efficient and asymptotically normal as the regularity conditions for those properties can be verified to hold (van der Vaart, 1998).

Through the use of polychoric correlations, the variables of each index computed was transformed into a linear combination of components in which each component represents a proportion of total variance. The First Principal Component (FPC) captures the greatest variance so the weights of each variable given by this component can be used as proxy for the common information contained by the variables that correspond to each one of the sub-indices (van der Vaart, 1998). This study uses Polychoric Principal Component analysis for the measure of women's empowerment in both economic and social dimensions. The Polychoric PCA technique allows one to synthesize multiple variables in one aggregate index that ranges from 0 to 100. Through the analysis of Polychoric PCA, four indexes are calculated: the economic power, family decision, violence and autonomy. Each of the sub-indexes was calculated by using scores that result from performing polychoric principal component analysis over series of variables. These variables include; Access to Economic Resources (gender, educational difference, type of earnings and whether the woman is working). Household Decision-Making variables comprise (final say on issues that are related to household decision-making issues which include: women's

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own health care, large household purchases, daily household purchases and visits to families or relatives). Women's acceptance of wife beating by their husbands on issues relating to, if she: (goes out without telling him, neglects the children, argues with the husband, refuses sex with husband and burns the food). In addition, women's freedom to seek for medical help for self on issues which include: (permission to go, concern no female provider around and not wanting to go alone). These empowerment variables were theoretically and empirically considered to be related with economic, family decision, violence and autonomy.

According to Uebersax, (2006) polychoric PCA procedure uses discrete variables and calculates what would be their correlation as if they were on a continuous scale. The variables used for the indexes are categorical, dichotomous and discrete. However, educational difference and partner educational variables are in a continuous form. The sub-indices for empowerment were computed through the following procedure. The variables for the principal component analysis have been already discussed above. The desirability for the choice of access to economic resources variables and social norms variables is based on the dimension that they describe a common phenomenon and the basic application the researcher is looking for in this computation is the women's empowerment index. As far as principal component analysis was originally developed for the multivariate normal distribution and samples from it, the principal component will work best on the variables as continuous and at least approximately normal. The variables from the data set were also standardized to have a mean of zero and variance one, this was done so that the principal component analysis capitalize on the dependencies among the variables rather than differences in measurement scales. The analysis output from the standardized data is equivalent to analysis of the correlation matrix of the original data. This study uses the first principal component as essential in the context of this current study.

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The First Principal Components (FPC) from each of the sub-indices has the meaning of measure of women's empowerment. The first principal component is the weighted sum of the standardized original variables that captures as much of the variance in the dataset as possible. In this study, the proportion of variance accounted for by economic power was 37%, for family decision 71%, 79% for violence and 69% for autonomy. The result for the component for the variables is also discussed below.

4.7 Interpretation of the Principal Components Analysis

In this section, the first principal component extracted is explained.

4.7.1 Economic Power

Table 6 shows the correlations between the principal components and the Access to Economic Resources variables. A correlation of 0.5 significant levels is deemed important. The result shows that the First Principal Component increases with whether the woman is working. Furthermore, the value increases with a decreasing type of earnings. The result of type of earnings can be viewed as a measure of the low economic power of women in terms of their income they earned. The result suggests that the first principal component correlates most strongly with whether the woman is working. It could be stated that based on the correlation of 0.709 this principal component is primarily a measure of whether the woman is working. It would follow that women who are working would tend to have a lot of economic power in terms of women's empowerment. However, women with small values for whether they are working would not be economically empowered. The second principal component strongly correlated with two of the access to economic resource variables. The second principal component

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increases with an increasing type of earnings and gender educational difference. This suggests that the two criteria vary together, thus if one increase the remaining one also increase. This could mean that type of earnings and gender educational difference lead to women's economic power.

4.7.2 Household Decision-Making

The first principal component score from table 7 shows that final say in large household purchases and final say in daily household purchase increases with women's decision-making. This means that as women's decision-making increases with large household purchases, their decision-making in purchasing for daily household needs also increases. The second principal component also revealed that an increase with only one of the values thus, final say in visits to relatives or families. This could mean that women who are allowed to make decision in visiting of their families or relatives have a larger say in decision-making. More so, the second component increases with the value of final say on own health care. This may probably mean that women have a say in their own health care in terms of decision-making. On the other hand, final say on daily purchases for daily needs increases with a decreasing value.

4.7.3 Acceptance Violence

The pattern of factor loadings from Table 8 shows wife beating if she goes out without permission loading positively on component 5, whilst wife beating if she neglect the children loaded negatively on component 5 as well. Additionally, acceptance of beating of wife if she argues with the husband loaded negatively on component 3 and positively on component 4. Refusal to have sex with husband loaded positively on component 3 and 4. Beating of wife if she

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burns the food loaded positively on component 1 and negatively on component 4. The positive correlation may mean that women who reject wife beating score high and are being empowered while the negative may represent women who accept wife beating leading to low status.

4.7.4 Women's Autonomy

The first principal component as shown in Table 7 depicts strong correlation with two of the autonomy variables. The first principal component increases with increasing women's freedom to seek for medical help for self on concern no female provider around and not wanting to go alone scores. This component can be viewed as women's autonomy in decision-making and not being problematic for them in seeking permission from their husband. This strong correlation may probably lead to women's empowerment. The second component increases with increase in seeking permission to go for medical help.

4.7.5 Definition and Measurement of Control Variables

As discussed in the literature, Socio-Demographic characteristic of the woman, the household and the community, all of which affect the use of reproductive health care services, are selected as control variables. Characteristics of the woman include: the woman and partners educational level, the woman's age and the age squared value of her age, the woman's place of residence which is measured (urban and rural), geographical zone of residence which is coded as ecological zones, the woman's ethnicity and her religious status. Household characteristics of the woman considered for this study include wealth quintile, the number of women in the household, sex of household head. In addition, the non - cluster proportion of children with complete

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vaccination was added as a community level variable. This variable aided in finding out health services accessibility. It is based on binary variable finding out the difficulty women go through in having access to health services in the community. The control variables included in the current study are defined as follows:

4.7.5.1 Individual Characteristics of the Woman Variables

- The woman's educational level is constructed as a categorical variable in three forms (0 if no education, 1 if Primary Education, 2 if Secondary Education, 3 if Tertiary Education).
- Partners Educational level is also constructed as a binary variable where (0 if no education, 1 if Primary Education, 2 if Secondary Education, 3 if Tertiary Education).
- The woman's age and the age squared value of her age is measured in years. Women from 15-49 years were included in the sample.
- The type of residence was measured as "urban" and "rural" according to the description given by Ghana Statistical Services (Ghana Statistical Service, 2012). Residence is the place of residence of the woman, which is coded as 0 if rural location, 1 if urban location.
- The administrative regions lived (region) in were grouped into four main sections based on nearness and the number of valid respondents available in each region even though there are originally ten regions in Ghana. These included "Southern" (Volta, Eastern, Western and Central regions); "Capital City" (Greater Accra region); "Middle" (Ashanti and Brong Ahafo regions) and "Northern" (Northern, Upper East and Upper West regions). Geographical zone of residence which is coded as ecological zones is constructed as categorical variable (1 if Southern Belt, 2 if Capital City, 3 if Middle Belt, 4 if Northern Belt).

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- The ethnicity of respondents was measured "Akan" and "other" (all other ethnic groups in Ghana). Ethnicity is constructed as a categorical variable (0 if Akans, 1 if Ga/Dangme 2 if Ewe, 3 if Guans, 4 if Northern Origin, 5 if others).
- The religion of respondents was measured as being Christian or non-Christian (Muslim and other religions). Religious status is classified as a categorical variable (0 if Christian, 1 if Muslim/Traditional).

4.7.5.2 Household Characteristics

- The level of household income is defined using the wealth quintiles as proxy for variable this variable. This is measured as 0 for poorest, 1 for poorer, 2 for middle, 3 for richer and 4 for richest.
- Number of eligible women in the household (de facto) is measured as a continuous variable.
- The sex of the respondents was female for the entire sample included in this study. Sex of household head is constructed as categorical variable (0 if female, 1 if male).

4.7.5.3 Community Level Variable

- Non - Cluster Proportion of Children with Complete Vaccination is defined as accessibility variable to measure proportion of children in a cluster who are fully vaccinated.

4.7.6 Estimation Strategy

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The Estimation strategy in this study is a binary choice probit strategy that estimates marginal effects of the empowerment indices on the dependent variables chosen. When working with binary data (0 or 1, yes or no), using a linear regression model in most instances is not appropriate. The probit estimation used examines the probability of a woman using any reproductive health care service explained in section 4.5.1-4.5.2 of this chapter (i. e. the probability of V=1, and the probability of a woman not using any of the selected reproductive health service, that is the probability of V=0). Thus the probability of a woman using reproductive health care services depends on the independent variables described earlier. The probit function used is given below:

$$\Pr(V=1)=\Pr(\beta_0+\beta_1+\beta_2 X_i+\beta_3 X_h+\beta_4 X_c+e>0)$$

From the estimation, Pr is the probability of using a reproductive health service, β_0 constant, X represents a vector of covariates (woman's individual characteristics, household characteristics and community characteristics), β is the coefficients to be estimated and β_1 is the empowerment index. On the other hand V=1, means the probability that reproductive health is used and V=0 means it was not used. The focus of this study is to explain the effect of X on the response probability pr (V=1), where V=1 if reproductive health service was used and V=0 otherwise. Furthermore, $\boldsymbol{\beta_1}$ is the indexed empowerment variables (economic power, family decision, violence and autonomy), $\mathbf{X_i}$ are the individual women's characteristics (women's age, education and others), $\mathbf{X_h}$ is the household characteristics of the woman (ethnicity, residency etc.) and $\mathbf{X_c}$ is the community characteristics (non-cluster proportion of complete vaccination) that also affect the woman and $\boldsymbol{\varepsilon}$ is the error term. For this study, in order to capture the effect of women empowerment on reproductive health, two different types of regressions are performed.

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In the first place, the independent variables of interest are the two major empowerment indices. Repressors of interest are the effect of economic power index on the four dependent variables. In the second place, repressors of interest are the effect of social empowerment indices (family, violence and autonomy) on the four dependent variables. The study also considered the effect of indexed empowerment variables without the controls to find out whether the addition of the controls would take the significance of empowerment away. More so, the study considers the raw empowerment variables not indexed, in order to better explain and capture the effect of each single variable on reproductive health.

Many different measures of pseudo-R-squared exist. They all attempt to provide information similar to that provided by R-squared in OLS regression; however, none of them can be interpreted exactly as R-squared in OLS regression is interpreted. For a discussion of various pseudo-R-squared see Long and Freese (2006).

The likelihood-ratio test uses the ratio of the maximized value of the likelihood function for the full model (L_1) over the maximized value of the likelihood function for the simpler model (L_0). The full model has all the parameters of interest in it. The simpler model is said to be a nested, reduced model, where an independent variable is dropped from the overall model. The likelihood-ratio, tests if the logistic regression coefficient for the dropped variable can be treated as zero, thereby justifying the dropping of the variable from the model. A non-significant likelihood-ratio test indicates no difference between the full model and the reduced model, hence justifying dropping the given variable so as to have a more parsimonious model that works just as well. The likelihood-ratio test statistic equals:

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$$-2\log\left(L_0 / L_1\right) = -2[\mathrm{Log}\left(L_0\right) - \mathrm{Log}\left(L_1\right)] = -2(\ell_0 - \ell_1)$$

Where $\ell_0 = \mathrm{Log}(L_0)$ and $\ell_1 = \mathrm{Log}(L_1)$

P-value is associated with a test statistic. It is "the probability, if the test statistic really were distributed as it would be under the null hypothesis, of observing a test statistic [as extreme as, or more extreme than] the one actually observed". The smaller the P value, the more strongly the test rejects the null hypothesis, that is, the hypothesis being tested. A p-value of .05 or less rejects the null hypothesis "at the 5% level" that is, the statistical assumptions used imply that only 5% of the time would the supposed statistical process produce a finding this extreme if the null hypothesis were true. Significance levels of 5% and 10% are common figures to which p-values are compared.

The probability of the Wald statistic was computed for each variable in the model to determine whether a variable should be removed or maintained to determine whether they are significant in predicting utilisation of reproductive health services. The corresponding Odds ratio, which is the likelihood that an event will occur given a particular exposure, was calculated for each variable in the model. The issue of multicollinearity in the logistic regression model was detected by examining the standard errors for the β coefficients.

4.7.7 Conclusion

In this chapter, the dependent variables used for the study have been extensively discussed. It also includes the measurement and the weight that has been attached to each. In addition, the main independent variable of interest, which is empowerment variables, was indexed to be used in a regression later.

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Table 1: Kendall tau b, result of Access to Economic Resources Variables

		Gender Educ. Diff.	**Type of** Earnings	**Woman** Working
Gender Educ Diff.	Kendall tau b	1		
	Observation	3154		
	P-value			
Type of earnings	Kendall tau b	0.0125	1	
	Observation	2877	3808	
	P-value	0.4194		
Woman Working	Kendall tau b	-0.0351	0.0383	1
	Observation.	3136	3792	4880
	P-value	0.0231	0.0129	

Table 2: Kendall tau b, result of Decision-Making Variables

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		own h'lth care	large Purchase	daily purchase	visits family
Final say: own health care	Kendall tau b	1			
	Obs.	2941			
	P-value				
Final say: large P'chsng	Kendall tau b	0.4418	1		
	Obs.	2939	2946		
	P-value	0			
final say p'chsing daily needs	Kendall tau b	0.3809	0.452	1	
	Obs.	2941	2946	2948	
	P-value	0	0		
final say visit family /relatives	Kendall tau b	0.3374	0.294	0.3609	1
	Obs.	2941	2946	2948	2948
	P-value	0	0	0	

Table 3: Kendall tau b: Kendall tau b, result of Violence Variables

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		Goes out	Neglects children	Argues Husband	Refuses sex	Burns food
goes out without telling him	Kendall tau b	1				
	Obs.	4859				
	P-value					
neglects the children	Kendall tau b	0.6738	1			
	Obs.	4808	4825			
	P-value	0				
argues with the husband	Kendall tau b	0.5185	0.5445	1		
	Obs.	4840	4808	4866		
	P-value	0	0			
refuses sex with husband	Kendall tau b	0.4366	0.423	0.4281	1	
	Obs.	4753	4749	4763	4775	
	P-value	0	0	0		
burns the food	Kendall	0.3906	0.3799	0.432	0.4647	1

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	tau b					
	Obs.	4844	4808	4848	4765	4869
	P-value	0	0	0	0	

Table 4: Kendall tau b: Kendall tau b, result of autonomy Variables

		Permission to go	**No female**	**not going Alone**
Permission to go	Kendall tau b	1		
	Number of Obs.	4905		
	P-value			
No female provider	Kendall tau b	0.0882	1	
	Number of Obs.	4903	4909	
	P-value	0		
Not going alone	Kendall tau b	0.1531	0.4084	1
	Number of Obs.	4899	4903	4905
	P-value	0	0	

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Table 5: Kaiser-Measure Sampling Adequacy, result of economic variables

Economic Power Variables	Comp 1	KMO
Gender educational difference	0.4112	0.50
Type of earnings	0.6256	0.50
A woman working	0.6630	0.50
Overall		0.50

Table 6: Kaiser-Measure Sampling Adequacy, result for family decision variables

Family decision Variables	Comp 1	KMO
Final say own health care	0.5082	0.74
Final say on large household purchases	0.5192	0.71
Final say about purchasing daily needs	0.5193	0.73
Final say on a visit to family or relatives	0.4500	0.78
Overall		0.74

Table 7: Kaiser-Measure Sampling Adequacy, result violence variables

Violence Variables	Comp1	KMO
Beating of wife if she: goes out without telling the	0.4762	0.78

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husband		
Beating of wife if she, neglects the children,	0.4765	0.77
Beating of wife if she, argues with the husband	0.4559	0.86
Beating of wife if she, refuses sex with the husband	0.4199	0.85
Beating of wife if she, burns the food	0.4026	0.84
Overall		0.81

Table 8: Kaiser-Measure Sampling Adequacy, result for autonomy variables

Autonomy Variables	**Comp1**	**KMO**
Getting medical help for self: getting permission to go	0.3423	0.64
Getting medical help for self: concern no female provider	0.6519	0.52
Getting medical help for self: not wanting to go alone	0.6767	0.52
Overall		0.53

Table 9: Result of Percentage Variances Accounted for by First Principal Component (FPC)

	Economic Power		**Family Decision**		**Violence**	**Autonomy**
	Normal	Polychoric	Normal	Polychoric	Normal	Normal

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					Polychoric		Polychoric	
	PCA	PCA	PCA	PCA	PCA		PCA	PCA
Variance of FPC (%)	35	37	53	71	58	79	49	69
Observation	3050		2939		4717		4897	

Table 10: Result of Principal Component Analysis of Economic Power Variables

Principal component Analysis. Factors extracted			
K	Eigen value	Prop. Explained	Cum. explained
1	1.133067	0.377689	0.377689
2	1.001685	0.333895	0.711584
Principal component Analysis. Matrix list			
Variables		comp 1	comp 2
Gender Educ. Diff.		-0.52524	0.667924
Type of earnings		0.470086	0.744228
Woman Working		0.709327	0.001364

Table 11: Result of Principal Component Analysis of Family Decision Variables

Principal component Analysis. Factors extracted			
K	eigen v	Prop.	Cum.exp

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		Exp				
1	2.829586	0.707397	0.707397			
Principal component Analysis. Matrix list						
Variables			comp 1	comp 2	comp 3	
Final say: own health care			0.49942	-0.11678	0.820248	
Final say: large Purchasing			0.513138	-0.49044	-0.1713	
final say purchasing daily needs			0.519232	-0.16474	-0.53817	
final say visit family /relatives			0.466548	0.847759	-0.09069	

Table 12: Result of Principal Component Analysis of Violence Variables

Principal component Analysis. Factors extracted						
K	eigen v	Prop. Exp	Cum.exp			
1	3.9735	0.7947	0.7947			
2	0.4144	0.0828	0.8776			
3	0.2844	0.0569	0.9344			
4	0.2161	0.0432	0.9777			
5	0.1114	0.0222	1			
Principal component Analysis. Matrix list						
Rotated Matrix			comp 1	comp 2	comp 3	comp 4	comp 5
goes out without telling			0.457297	-0.44939	0.283841	-0.23514	0.673109

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him					
neglects the children	0.460108	-0.46427	0.151455	-0.12653	-0.73062
argues with the husband	0.447966	-0.10248	-0.65187	0.593238	0.109362
refuses sex with husband	0.431916	0.549123	0.58274	0.414186	-0.02787
burns the food	0.438127	0.520061	-0.36329	-0.63657	-0.01963

Table 13: Result of Principal component analysis of autonomy variables

Principal component Analysis. Factors extracted			
K	Eigen value	Prop. Exp	Cum.exp
1	1.820498	0.606833	0.606833
2	0.839945	0.279982	0.886814
3	0.339557	0.113186	1
Principal component Analysis. Matrix list			
Variables		comp 1	comp 2
permission to go		0.419974	0.893227
no female provider		0.623284	-0.41245
not going alone		0.65965	-0.17898

Table 14: Summary of variables used in the study

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Reproductive Variables	Description
Use of contraception	Ever used a modern contraception method: traditional methods* (0), modern methods (1)
Timing of first antenatal	Timing of first antenatal visit: within first trimester less than four (1) all others(0)*
Skilled delivery	Assisted by skilled birth delivery: 0 No*, 1 Yes
Place of delivery	Place of delivery: home* (0), health facility (1)
Economic power variables	
Gender Educ. Difference	Woman's education in single years, partners education in single years
Type of Earnings	Women's earnings for work: (0) not paid*, (1)paid in-kind (2) in-cash and in kind (3) cash only
Woman working	Women who are working: (0)* no, (1) yes
Family decision variables	
Final say: own health care	Woman's decision-making measured: partner alone or others* (0), (1) woman alone and partner
Final say: large household purchases	Woman's decision-making measured: partner alone or others* (0), (1) woman alone and partner
Final say: purchasing daily needs	Woman's decision-making measured: partner alone or others* (0), (1) woman alone and partner
Final say: visit to family or relatives	Woman's decision-making measured: partner alone or others* (0), (1) woman alone and partner
Violence variables	

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Beating of wife: goes out without telling him	Wife beating is measured: (0) not justified (1) justified*
Beating of wife: neglects the children	Wife beating is measured: (0) not justified (1) justified*
Beating of wife: argues with the husband	Wife beating is measured: (0) not justified (1) justified*
Beating of wife: refuses sex with husband	Wife beating is measured: (0) not justified (1) justified*
Beating of wife if she: burns the food	Wife beating is measured: (0) not justified (1) justified*
Autonomy variables	
Getting medical help: permission to go	Women getting permission from husband: (0) big problem* (1) not a big problem
Getting medical help: no female provider	Women getting permission from husband: (0) big problem* (1) not a big problem
Getting medical help: not going alone	Women getting permission from husband: (0) big problem* (1) not a big problem
Empowerment indexes	
Economic power index	Economic power index computed using: Polychoric PCA
Family decision index	Family decision index computed using: Polychoric PCA
Violence index	Violence index computed using : Polychoric PCA

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Autonomy index	Autonomy Index Computed using: Plychoric PCA
Control Variables	
Woman's Age	Current age of the respondent. Continuous variable
Woman's Age Square	Current age square of the respondent. Continuous variable
sex of Household Head	Sex of household: measured female (0), male (1)
Age of Household Head	Age of household head in the household. Continuous variable
No. of Women in the Household	Number of eligible women in the household (de facto). Continuous variable
Residence	Place of residence. Binary variable: urban location* (0), rural location (1)
Accessibility Variable	
NSCPCCV	Proportion of children in a cluster who are fully vaccinated.
Women's Education	Woman's educational Level is in 3 categories; 0* No Educ., 1: Prim Edu., 2:Sec Educ., 3 Tertiary
Partners Education	Partner's Educational level is in 3 categories; 0* No Educ., 1: Prim Educ., 2: Sec. Educ. 3: Tertiary
Wealth quintile	Measured as ; 0 poorest 1 poorer 2 middle 3 higher 4 highest
Number of living children	Measured as ; 0 No child 1 first - second, 2 third - fourth, 3 fifth plus

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Birth control	Measured as: 1 First Order, 2 Second Order, 3 Third Order, 4 Fourth Order
Ethnicity	Ethnicity as a categorical variable. This is measured as 0: Akans, 1: Ga/Dangme 2: Ewe 3: Guans, 4: Ethnicity of Northern Origin, 5: Others
Religion	Religion as a categorical variable. This is measured as 0: Christian, 1: Muslim/Traditional
Ecological zone	Eco-Zone: 1 if Southern Belt,2 if Capital City , 3 if Middle Belt and 4 if Northern Belt.

Reference/ Base categories*

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CHAPTER FIVE

RESULTS AND DISCUSSIONS

5.0 Introduction

In this section, a discussion of women's empowerment and reproductive health status is positioned in existing literature. It includes: univariate descriptive statistics of the variables used in the analysis, bivariate findings and multivariate findings. The section further presents the results of marginal effect estimates of probit regressions on the effect of women empowerment and reproductive health.

5.1 Descriptive Findings

Before starting to deeply analyze the data and to investigate the main effect of economic and social empowerment on reproductive health care utilisation, descriptive statistics of the variables used in the analysis are displayed in Table 15 and 16.

5.1.1 Univariate Analysis

This section involves the summary and description of independent and reproductive health care variables used in the analysis. It includes discussing means and standard deviations of the continuous variables and the categorical variables.

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5.1.2 Mean, Standard Deviation of Continuous Variables

The economic power index as shown in Table 15 has a mean of 0.68 and standard deviation of 0.1. Furthermore, the family decision index has a mean of 0.72 and a standard deviation of 0.32. In addition, violence index has a mean of 0.8 and standard deviation of 0.3 while autonomy index has a mean of 0.83 and standard deviation of 0.27.

5.1.3 Summary Description of Dependent Variables

The univariate statistics of the dependent variables as shown in Table 16 show that traditional method of contraceptive use is 86% and 13% for modern method. Timing of first antenatal visits shows that 42% of the respondents did not visit antenatal care during the first trimester while 58% of response says yes. On skilled birth attendance, 73% of the respondents were not assisted by a health professional during delivery while 26% were assisted by a health professional. With regards to place of delivery, 43% of the women deliver at home while 56% deliver in health facility.

5.1.4 Reproductive Health Services in Ghana and other Sub Saharan-African Countries

According to the Ghana DHS previous indicators and current one on contraceptive use, the use of modern contraceptive methods has seen a steady increase from 5 percent in 1998 to 19 percent in 2003 and decrease again in 2008 to 17 percent. Overall, there has been only a small decrease in use of traditional methods over the past 20 years. While there was an increase in the use of traditional methods from 8 percent in 1988 to 10 percent in 1993, use of these methods decreased to 9 percent in 1998 and to 7 percent in 2003, and remained at this level in 2008 (GSS et al., 2004; 2009).

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With regards to timing of antenatal visits, the results from Ghana DHS indicate that there has been a marked improvement in antenatal care coverage in Ghana over the past 20 years. In 1988, 82 percent of mothers received antenatal care for their most recent birth in the five years preceding the survey, compared with 95 percent of mothers in 2008. From this percentage of antenatal care visits there is also an increasing trend for women to have their first antenatal care visit before the fourth month of pregnancy (55 percent in 2008, compared with 46 percent in 2003).

Furthermore, there has been an increase in skilled birth assistance during delivery over the past years, from 47 percent in 2003 to 59 percent in 2008. In spite of these increases, skilled birth attendance during deliveries continues to be low in Ghana (GSS et al., 2004; 2008). In 2003 (53percent) of births occurred at home while in 2008 (42 percent) of births occurred at home. The 2008 Ghana DHS report showed that (57 percent) of births occurred in health facility while in 2003 Ghana DHS (46 percent) of births occurred in a health facility. These two results showed that there has been an increase in deliveries in health facilities.

The use of contraceptive method varies across most sub Saharan-African countries. For instance contraceptive use increased in Malawi from 26 percent in 2004 to 42 percent in 2012 (Chintsanya, 2013) and in Rwanda from 10 percent in 2005 to 45 percent in 2010, however in Ghana it increase from 22 percent in 1998 to 25 in 2003 before dropping to 24 percent in 2008. Using the DHS comparative report number 26, the report showed that although there is progress in antenatal care coverage, a lot of women, particularly in Sub-Saharan Africa tend to wait until the second or third trimester before they start antenatal visits. The report further revealed that 36.4 percent of women in Burkina Faso had their first antenatal care visit during the first trimester in 2003 and in Mozambique 20.9 percent of women also had their first antenatal care

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visit during the first trimester in 2003. More so, in 2008 women who had their first antenatal care visit during the first trimester in some selected Sub-Saharan African countries showed 15.7 percent visit in Kenya: 25.4 percent in Nigeria and 30.1 percent in Madagascar. Comparing the result to Ghana the DHS report showed that (57 percent in 2008, compared with 46 percent in 2003) respectively (Ghana Statistical Service (GSS) et al., 2009). From the estimate discussed above, one would observe that Ghana is doing exceptionally well in antenatal care visit during the first trimester as compared to the other Sub Saharan-African countries enumerated above.

Assistance skilled birth delivery is considerably lower in sub Saharan-Africa and Asia than in other developed regions (Wang et al, 2011). Within some selected sub Saharan-Africa countries the following trend was obtained. In Burkina Faso in 2003, women who were assisted by a health professional during delivery were 39.7 percent while in Mozambique 47.2 women were assisted in delivery by health professional. Furthermore in 2008, women in Kenya who were assisted by a health worker were 48.0; in Madagascar it was 47.2 while in Nigeria it was 36.1. With regards to Ghana, there has been an increase in the pattern of skilled birth attendance thus from 47 percent in 2003 to 59 percent in 2008 (Ghana Statistical Service (GSS et al., 2009). From this estimate, Ghana is performing well in terms of skilled birth delivery as compared to the selected sub Saharan-African countries.

With regards to place of delivery care, there is a rise in the trend towards place of deliveries occurring in health facilities, both public and private facilities. The percentage of deliveries taking place in health facilities for the selected Sub Saharan-African countries in 2008 showed that, in Nigeria 36.5 births occurred in health facilities as in Kenya 46. 8 percent of births were delivered in a health facility. Furthermore, 40.5 percent births occurred in health facilities in Burkina Faso in 2003 while in Mozambique, 46.8 percent births were delivered in health

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facilities in 2003. Also in Ghana, there was an increase in health facility deliveries. The report showed that 57 percent of births were delivered in health facilities, with the public sector accounting for the largest proportion; this is an increase since the 2003 GDHS (46 percent) (Ghana Statistical Service (GSS et al., 2009). Comparing Ghana to other selected Sub Saharan-African countries, the country seems to be doing well in terms of increase in health facility deliveries. This increase in Ghana may probably be because of the introduction of National Health Insurance Scheme which reduces the burden of cost for delivery care.

5.2 Bivariate Analysis

In this section the bivariate analysis is done. It involves the discussion of the pairwise correlation between the empowerment variables and the reproductive health services as well as the control variables. The analysis is displayed in Table 17 and 18.

5.2.1 Pairwise Correlation between Empowerment Variables and Reproductive Health

The bivariate correlation as shown in Table 17 and 18 contains important information which includes: the pairwise correlation coefficient, the level of statistical significance and the sample size. Table 17 shows the pairwise correlation between the empowerment indices and utilisation of reproductive health services. From the result, the correlation coefficients for economic power were: contraceptive use (0.0546), timing of first antenatal visits (0.0835), skilled birth attendance (0.0159) and place of delivery (0.0497). As the sign of the correlation coefficient are positive, it can be concluded that there is a positive correlation between economic power and utilisation of the four reproductive health services; that is, economic power increases as utilisation of reproductive health services increases. The level of statistical significance (*p-value*) of the

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correlation coefficient also shows that economic power is significant with three of the reproductive health services except skilled birth attendance.

With family decision-making, the correlation coefficients with the reproductive health services were: contraceptive use (0.0352), timing of first antenatal visits (0.0274), skilled birth attendance (0.0024) and place of delivery (0.0661). From the result, there is a positive correlation between all the four reproductive health services based on the coefficients. The positive correlation may mean that an increase in women's decision making will result in increase in these three reproductive health services while for place delivery, an increase in decision-making will lead to decrease in utilisation. The level of significance shows that family decision-making is significant with contraceptive use and place of delivery.

With regards to family decision-making, the correlation coefficients show the following result: contraceptive use (0.0106), timing of first antenatal visits (0.0592), skilled birth attendance (0.0346) and place of delivery (0.1532). Violence index shows a positive and significant correlation with timing of first antenatal visit, assisted skilled delivery and health facility delivery except contraceptive use. The positive correlation also implies that an increase in women's rejection of violence against them may result in increase in utilisation of reproductive health services. The strong correlation between violence and three of the reproductive health care services implies women who reject wife beating are more likely to use reproductive health care services. Furthermore, the correlation coefficients score of women's autonomy and utilisation of reproductive health has a mixed result. It has a negative correlation with timing of first antenatal visits but positive correlation with the other three reproductive health services. The strong correlation between violence and three of the reproductive health care services implies women who reject wife beating are more likely to use reproductive health care services. The correlation

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also shows that women's autonomy is significant with skilled birth attendance and place of delivery.

5.2.2 Pairwise Correlation between Control Variables and Reproductive Health

The result in Table 18 on control variables shows that women's age is significant with contraceptive use, skilled delivery, but not with first antenatal and place of delivery. The correlation result further revealed that sex of household head is significant with contraceptive use and place of delivery. On the contrary, age of household head and the number of women in the household are not significant with the four dependent variables. With regards to residency, it is not significant with the four dependent variables. Women's education is significant with contraceptive use, timing of first antenatal visits and place of delivery except skilled birth delivery. Partner's education is significant with the four dependent variables. Wealth quintile is significant with all the four reproductive health variables. Number of living children is significant with contraceptive use, skilled delivery but not with timing of first antenatal and place of delivery. Birth order is significant with contraceptive use. Ethnicity, religion and ecological zones are all not significant with all the reproductive health variables. On the issue of child vaccination, it is significant with all the four dependent variables.

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5.3 Multivariate Findings

This section describes the marginal effect of probit regression of the empowerment variables and dependent variables.

5.3.1 Economic Power and Utilisation of Reproductive Health Services

The result in Table 19 shows that the economic power index is significant with modern contraceptive use and timing of the first antenatal visits; however, it is insignificant with assisted skilled birth delivery and health facility delivery. The result with the individual variables making the economic power index as shown in Table 23 shows that gender, educational difference is insignificant with the four dependent variables. The result also shows that type of earnings and women who are working is significant with modern contraceptive use but insignificant with the other three dependent variables. It means that economic index is driven by type of earnings and women who are working. The bivariate result in section 5.2.1 showed that economic power was significant with contraceptive use, timing of first antenatal visits and place of delivery except skilled birth attendance. Another result, this time without the control variables indicates as shown in Table 27 shows that economic power index is significant with modern contraceptive use, timing of first antenatal visit, place of delivery but insignificant with skilled birth delivery. This shows that the addition of control variables weakens the effect of the empowerment index on the use of reproductive health services. The result confirms that access to economic power index; individual variables making up the access to economic resources and the bivariate correlation are all related to utilisation of three of the reproductive health services.

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5.3.2 Family Decision-Making and Utilisation of Reproductive Health Service

In terms of family decision, as shown in Table 20, it is insignificant with the four dependent variables. The result on individual family decision variables as shown in Table 24 of shows that final say on own health care is insignificant with the four reproductive health variables. The result further revealed that final say on large household purchases was negatively significantly associated with timing of first antenatal visits but insignificant with the other three reproductive health services. More so, final say on daily household purchases is negatively significantly related to contraceptive use but insignificantly associated with the other three reproductive health services. However, final say on visits to family or relatives has a mixed result. The variable is positively and significantly associated with contraceptive use and negatively significant with health facility delivery. In Table 27, the result on only the family decision variables without the other independent variables shows that family decision index is positive and significantly associated with place of delivery but insignificant with contraceptive use, timing of first antenatal visits and assisted skilled birth delivery.

5.2.3 Violence and Utilisation of Reproductive Health Service

Additionally, Table 21 shows that disagreement with wife beating in Ghana is positively significantly associated with, assisted skilled birth delivery whereas it was insignificant with modern contraceptive use, health facility delivery and timing of first antenatal visits. Results on individual violence variables as shown in Table 25 shows beating of wife if she: goes out without telling the husband, neglects the children, argues with the husband, refuses sex with the husband and burns the food were all not significant with the four dependent variables. Furthermore, violence index without the other independent variables in Table 27 shows that

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violence index is positive and significantly related with timing of first antenatal visits, skilled birth delivery and health facility delivery but insignificant with modern contraceptive use. This result further confirms that the introduction of controlled variables in the regression takes away part of the empowerment

5.3.4 Autonomy and Utilisation of Reproductive Health Service

The result of autonomy index in Table 22 shows an insignificant with the four dependent variables. Results on individual autonomy variables as shown in Table 26 shows that getting permission to go for medical help for self and concern no female provider is around were not significant with the four dependent variables. The result further shows that female not wanting to go alone for medical help is negatively significant with timing of first antenatal visits. Additionally, autonomy index without the control variables in Table 27 shows that autonomy is significant with assisted health delivery and health facility delivery but not significant with modern contraceptive use and timing of first antenatal visit. This also means that the introduction of controlled variables takes away part of the empowerment away.

5.3.5 Control Variables and Utilisation of Reproductive Health Services

The result shows that age of the woman is not significant with modern contraceptive use and timing of first antenatal visits but significantly associated with assisted skilled birth delivery and health facility delivery. The result also indicate that women who had Primary Education and Secondary Education were positively and significantly associated with modern contraceptive use, assisted skilled birth delivery and health facility delivery but insignificant with timing of first antenatal visits. However, women with Tertiary Education are not significantly associated

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with all the four dependent variables. Partner's education is positive and significantly associated with modern contraceptive use, skilled birth delivery and health facility delivery but insignificantly associated with timing of first antenatal visits. The result further shows that sex of household head, age of household head and number of women in the household were not significantly associated with the four dependent variables. Additionally, women in the poorest wealth quintile are less likely to use modern contraceptive and timing of first antenatal visits but are more likely to use assisted skilled birth delivery and health facility delivery. The result further, shows that women in the poorer, middle, higher and highest wealth quintile were positively and significantly associated with skilled birth delivery and health facility delivery. The result again shows that women with lowest number of living children (1-2) are not significantly associated with contraceptive use whereas those with higher and highest number of living children (3-4 and 5+) were positively and significantly associated with contraceptive use, respectively. The result also shows that women with first order birth, second order birth, third order birth and fourth order birth and above are negatively significant with timing of first antenatal visit, skilled birth delivery and health facility. Findings on ethnicity indicate that compared to Akans, the Ga Adangmes are not significantly associated with the four dependent variables. Additionally, Ewe and Guans are significantly associated with contraceptive use and health facility delivery but insignificant with the other two dependent variables.

The result further shows that Northern women are significantly associated with all the four dependent variables. Furthermore, women who are Muslims or in traditional religions were negatively and significantly associated with contraceptive use, timing of first antenatal care visits, but insignificantly with skilled birth delivery and health facility delivery. In terms of residency, women residing in rural areas are significantly negatively linked to assisted skilled

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birth delivery and health facility delivery but not significant with modern contraceptive use and timing of first antenatal care visits. On the issue of ecological zone, women from the Capital City are less likely to use four of the reproductive health services. The result also shows that, women from the Middle Belt were not significant with modern contraceptive use, but negatively significant with timing of first antenatal care visits and positively significant with skilled birth delivery and health facility delivery. Women from the Northern belt, were insignificant with modern contraceptive use, assisted birth delivery and health facility delivery, but negatively significant with the timing of the first antenatal care visit. The result indicates that NSCPCCV is significantly and positively associated with three of the reproductive health services except health facility delivery.

5.4 Discussion of Findings

In this section the result of the study is discussed in relation to the objectives and literature reviewed.

5.4.1 Discussion of Empowerment and Utilisation of Reproductive Health Services

From the study it was found that economic power was associated with contraceptive use and timing of antenatal visits during the first trimester. The result confirms a study conducted by Rahman(2012) which revealed that women's empowerment positively influences the use of contraception and antenatal care. However the result of this study contradicts Rahmans assertion that empowerment also positively influences birth attendant, and place of delivery. The association of economic power with contraceptive seems reasonable as women who have power economically can purchase modern contraceptive methods for use. More so, because some

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women have the economic power they may tend to delay child birth and therefore increase their use of contraceptive to prevent unwanted pregnancies. Women who have economic power may also be exposed to information, knowledge, and new attitudes about modern health care at their workplaces or through the media, may therefore probably utilise reproductive health services when they are in need. The relationship between economic power and contraceptive use as well as timing of antenatal visits use can also be explained by the fact that a woman's control over economic resources may enhance her ability to exercise choice. The obvious benefits is that women who earn income for themselves and those who are working may sometimes bargain with the husband and bear the cost of contraceptive use or pay for extra cost at the clinic during an antenatal visit. Women may also be given advice to practice family planning methods during antenatal visit.

A study by Sharif and Singh (2002) conducted in rural India on determinants of maternal health found out that there is an association between household income and utilisation of maternal health services. It was evident in their studies that as a result of lack of resources for women, income earned had a negative impact on utilisation of antenatal care. The findings also confirm earlier work done by Chakraborty et al., (2003) which found that women who are involved in gainful work are more likely to use modern health care services to treat complications during pregnancy. This study also confirms the findings of Do and Kurimoto (2012) which was conducted in Namibia, Zambia, Ghana and Uganda that household economic decision-making in Ghana was associated with the use of contraceptive. In a similar work, Chrisman et al., (2012), observed that women who had any form of formal education were more "sexually empowered" to use reproductive health services than those who did not have any.

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The result on family decision-making index shows no significance with the four dependent variables. The family decision insignificance with timing of first antenatal visit may also be due to the fact that women were not able to meet the minimum requirement of at least one antenatal visits recommended by the World Health Organisation (WHO, 2005. P. 210) during the first trimester. However, work done by Hou and Ma (2011) rather showed women's decision-making power was positive and significantly associated with, prenatal visits, skilled birth delivery but insignificant with institutional delivery. Their study also confirms the findings of this study which showed that it was not associated with institutional birth. In another study Beegle *et al.*, (2001) reported an association between participation in decision-making and contraceptive use. From the findings it can be said that decision-making is not an issue in Ghanaian society. The result of family decision and reproductive health is not surprising since the univariate result shows an increase in household decision-making. This may also mean that in Ghana decision-making on reproductive health is not an issue as compared to Asia countries where there is a restriction on movement. However, at the bivariate level, family decision was correlated with health facility delivery. At the individual level, there was not much change with the variables not being associated with reproductive health.

The findings on violence index indicated a positive association with two of the reproductive health services, skilled delivery and place of delivery. Women who reject violence against them are likely to be autonomous as it raises their status in the society. Therefore, the association of rejection of violence with reproductive health services might be due to the fact such women have power over their sexual and reproductive rights and tend to utilise these reproductive health services. This finding is in agreement with earlier findings by Adjiwanou and LeGrand (2014) which indicated that women in Ghana and

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Uganda, who tolerate violence against them, are less likely to use skilled birth attendants and timely antenatal care. At the bivariate level, violence index was associated with the timing of first antenatal visits and health facility delivery confirming the result with multivariate level with its association with the health facility delivery. The result also confirms the outcome of a study conducted by Albania DHS which revealed that decision-making and attitude of women towards domestic violence has a positive influence on antenatal visits and post-natal care after controlling for a number of socio-economic and demographic factors which are organized at individual, household, and community level (Lantona et al., 2014).

With regards to findings of autonomy and reproductive health, it was shown that autonomy index is insignificant with the four dependent variables. The result contradicts a lot of studies that have documented that freedom of movement as an important predictor for women's reproductive health care seeking behaviour (Bloom et al., 2001).Studies have showed that women who are more autonomous have increased health seeking (Haque et al., 2012), are more likely to have skilled delivery attendance (Fotso et al., 2009) and utilise modern contraceptive methods (Chrissman et al., 2012). Empowerment, as previously discussed, is context specific and varies from one region to the other. Autonomy might be associated with reproductive health in Asia countries where women's restriction of freedom of movement is a norm therefore, women who break them are highly recognised as being powerful. The insignificance of women's autonomy with the four reproductive health services might probably be as a result of freedom of movement not being an issue in Ghanaian context.

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5.4.2 Discussion of Control Variables and Utilisation of Reproductive Health Services

The result show that women's age was significantly and positively associated with skilled birth delivery and health facility delivery except in the case of modern contraceptive use and timing of first antenatal care visits. From the result, women's age square shows a negative coefficient along with women's age. This shows that the probability of a woman being assisted by a health worker and delivering in health facility increases with women's age, reaches a height and start to fall(around 35 years based on the data) and later decreases. The finding is reasonable because pregnancy complications are likely to be more amongst older women and the possibility of increase use of reproductive health service to reduce probable complications. Previous work done indicates the understanding that compared to younger women, older women are more likely to use reproductive health care services (Addai, 2000; Celik and Htchkiss, 2000; Mekonnen and Mekonnen, 2003).

From the findings women's education and partner's education were associated with three of the reproductive health services; contraceptive use, skilled birth delivery and health facility delivery but have an insignificant effect on timing of first antenatal care visits. In line with earlier discussion on women's education, partners who are educated could be more open-minded and well-informed of current health choices and the use of modern technologies such as scanners than those with no education. Women's whose partners have such knowledge could stand a better chance of allowing them to utilise reproductive health services when in need. As discussed in the existing literature, women's education confers a lot of benefits that are potential sources of power, including increased knowledge and skills, enabling more educated women to better understand, interpret and operate within their environments (Kisshor, 1999). Ochako et al.,

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(2011) confirms education and other factors as having an influence on utilisation of reproductive health care services. More so, Mosiur et al., (2008) found women's education to be positively associated with medical check-up at first trimester and women who can make household affairs are probable to check up at the time of pregnancy. In another study women's autonomy was found to be improved, through education as it helped them to develop better confidence and capabilities in decision-making with regards to their own health (Gabrysc and Compbell, 2009). Furthermore, educated women are more probably able to be more knowledgeable about existing health care services and complications of pregnancies, and use this information to attain worthy health status (Brugard, 2004; Furuta and Salway, 2006). The outcomes of this study are then reliable with earlier discoveries on the link between education and reproductive health care services utilisation (Celik and Hotchkiss, 2000; Addai, 200; Mekonnen and Mekonnen, 2003; Chakraborty et al., 200; Overbosch et al., 2004).

As anticipated from the findings, higher and highest wealth quintile was associated with all the four reproductive health services. With the introduction of the free maternal health care policy in Ghana antenatal care and health facility delivery are supposed to be free in all public health facilities. Based on the free maternal health care policy, one would expect a weak positive association between wealth quintile and timing of first antenatal care visits and health facility delivery. The strong positive significant association proposes the existence of higher indirect cost of using these services (higher opportunity cost for the poor and long distances to health facilities). On the other hand, it may also reflect the poor quality of services from public health facilities, making users choose private facilities where services are charged sometimes at high cost, thus limiting accessibility to the poor.

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From the findings, women's increased number of living children has an association with contraceptive use. Women with higher number of living children might not want children anymore and therefore, may use contraceptive to prevent unwanted pregnancies. On the other hand, it was found from the result that higher order of birth was negatively associated with the use of reproductive health services. The negative association with these reproductive health care services might be due the reason that women who are delivering for the first time are mostly associated with pregnancy complications. Therefore, women with first time pregnancies are more likely to use reproductive health care services. Health workers may also recommend a higher level of use for early order birth, women to safeguard that complications are reduced to the lowest minimum (Navaneetham and Dharmalingam, 2001). In addition, the experience gained from earlier birth may reduce the level of use of reproductive health services (Celik and Hotchkiss, 2000; Mekonnen and Mekonnen, 2003).

With regards to ethnicity, the findings showed mixed results of association with reproductive health services. The mixed result obtained from the findings is not surprising as culture is dynamic; the different ethnic groups in Ghana have different perception in relation to reproductive health service utilisation. The existing literature found an association of ethnicity as an essential determinant of healthcare (Celik and Hotchkiss, 2000). In another study, Ekman et al., (2007) found ethnicity to be associated with healthcare. From their findings, they contend that belonging to the ethnic majority group determines the utilisation of health services.

The findings on religion indicated a negative association with the utilisation of reproductive health services. Consistent with literature, religion is found to be a socio-cultural phenomenon where people practice and hold onto their faith, norms and tradition, values and doctrines. It means that if such norm, values, beliefs and others are in conflict with modern medicine and

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technologies, they are likely not to use these modern medicines for the sake of keeping their faith. In many developing countries, it is not a surprise as religion has been found to have a significant association with the use of reproductive health care services. For instance, Addai (2000) and Navaneetham and Dharmalingam (2001) found that antenatal care services were more likely to be used by Christians compared to Muslim women.

With regards to residency, the findings showed a negative association with reproductive health services. Women living in rural areas may lack such reproductive health services and despite the intention to use them, these services might not be available. The rural communities also lack modern technologies of medicine that help in preventing complications in terms of emergencies and therefore tend to have a negative impact on their health. This is reliable with the findings of earlier studies by Navaneetham and Dharmallingam (2001) and Celik and Hothkiss (2000). They contend that women who are living in urban areas may be closer to health facilities and are more likely to use reproductive health care services.

Furthermore, the findings indicate an accessibility variable used has been found in the study to be consistently associated with the utilisation of reproductive health services. For instance in the existing literature it was found that in rural Tanzania, a higher percentage of women who delivered at home planned to have delivered in a health facility, but could not due to distance and lack of transportation (Bicego et al., 1997). In Ghana, the location of clinics closer to the communities helps to alleviate the problem of travelling long distances. More so, the significance of non-cluster proportion of complete child vaccination (NSCPCCV) which was used as a proxy for accessibility might not be a surprise. This is because child vaccination as a national intervention is normally carried out during the antenatal and postnatal visits and this is reflective of access and availability of reproductive health services in the community.

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5.5 Conclusion

In this study, women's empowerment as measured by economic power and social norms and their effect on reproductive health care services were examined using data from the DHS Survey from Ghana. The primary aim is to find out whether there is a relationship between women's empowerment and utilisation of reproductive health services. The result showed that the level of women's economic power is above sixty percent and this is considered high. The findings showed that economic power was associated with only contraceptive use and timing of first antenatal visit and not related to the other two dependent variables. The findings on family decision showed very high levels of decision-making at the household level. About seventy percent of women in Ghana take decision on their own. Therefore, in seeking for reproductive health care they either take the decision on their own or jointly with their husband, meaning, decision-making in reproductive health care is not an issue in Ghana. The findings on violence indicate a low percentage acceptance of the justification of wife beatings for the reasons indicated in the violence index section. On autonomy, women have highest autonomy in decision-making.

Table 15: Result of Summary statistics of continuous variables used in the study

Variables	N	Mean	SD
Empowerment indexes			
Economic power index	3050	0.68	0.1
Family decision index	2939	0.72	0.32
Violence index	4717	0.8	0.3
Autonomy index	4897	0.83	0.27

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Woman's Age	4916	28.99	9.7
Woman's Age Square	4916	934.92	601.22
Age of Household Head	4916	43.75	13.91
No. of Women in the Household	4916	5.29	2.83

Table 16: Result of Tabulation of Categorical Variables

Variables	Frequency	Percentage	Cumulative
Use of contraception			
Traditional method	4,253	86.51	86.51
Modern method	663	13.49	100
Timing of first antenatal			
No	867	42.27	42.27
Yes	1,184	57.73	100
Skilled delivery			
No	3,622	73.68	73.68
Yes	1,294	26.32	100
Skilled delivery			
No	3,622	73.68	73.68
Yes	1,294	26.32	100
Place of delivery			
Home	930	43.34	43.34
Healthcare Facility	1,216	56.66	100
Women's Educational Level			

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No Education	1, 243	25.31	25.31
Primary	999	20.34	45.64
Secondary	2, 489	50.676	96.32
Tertiary	181	3.68	100
Partners Educational Level			
No Education	870	27.21	27.21
Primary	255	7.98	35.19
Secondary	1, 750	54.74	89.93
Teriary	322	10.07	100
Wealth Quintile			
Poorest	1,089	22.15	22.15
Poorer	921	18.73	40.89
Middle	897	18.25	59.13
Higher	1, 024	20.83	78.96
Highest	985	20.04	100
Number of Living Children			
No Child	1, 651	33. 58	33.58
Number of Living Children: 1-2	1, 432	29.13	62.71
Number of Living Children: *3-4*	1,049	21.34	84.05
Number of Living Children: *5+*	784	15.95	100

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Birth Order			
1st Birth Order	651	19.73	19.73
2nd Birth Order	644	19.52	39.73
3rd Birth Order	546	16.55	55.8
4th Birth Order and Above	1, 458	44.2	100
Ethnicity			
Akans	2,136	43.47	43.47
Ga/Dangme	309	6.29	49.76
Ewe or Guans	754	15.34	65.1
Northern Groups	1,527	31.07	96.17
Others	188	3.83	100
Religion			
Christian	3,630	73.89	73.89
Muslim/Tradiionlist/Others	1,283	26.11	100
Ecological Zones			
Southern Belt	1,205	24.51	24.51
Capital City	692	14.08	38.59
Middle Belt	1,697	34.52	73.11
Northern Belt	1,322	26.89	100

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Table 17: Results of Pairwise Correlation between empowerment indices and reproductive health services.

	Contraceptive use	Time first ANC	Skilled Delivery	Place Delivery	Economic Index	Family Dec Index	Violence Index		Auto-nomy Index
Contraceptive use	1								
Time first	0.043	1							
	(0.051)								
Skilled	0.1264	0.1247	1						
	(0.000)	(0.000)							
Place	0.1117	0.1122	0.9086	1					
	(0.000)	(0.000)	(0.000)						
Economic	0.0546	0.0835	0.0159	0.0497	1				
	(0.004)	(0.001)	(0.396)	(0.039)					
Family	0.0352	0.0274	0.0024	0.0661	-0.0085	1			
	(0.056)	(0.242)	(0.896)	(0.004)	(0.669)				

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Violence	0.0106	0.0592	0.0346	0.1532	0.0465	0.1243	1		
	(0.468)	(0.008)	(0.017)	(0.000)	(0.014)	(0.000)			
Autonomy	0.0042	-0.0147	0.0404	0.1122	-0.0186	0.0314	0.0837		1
	(0.767)	(0.506)	(0.005)	(0.000)	(0.322)	(0.089)	(0.000)		

Note: P values in parentheses
Source: Author's Calculation.

Table 17: Result of Pairwise correlation between control variables and reproductive health

Variables	**Cont. use**	**Timing first ANC**	**Assist. Deliv.**	**Place Deliv.**	**Women Age**	**Age squared**	**Educ. level**	**Partners Educ.**	**Sex H.H**	**Age H.H**	**No. Women H.H**	**Residence**
Contraceptive use	1											
Timing of first ANC	0.043 (0.051	1										

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	)						
Skilled Birth Attendance	0.1264 (0.000)	0.1247 * (0.000)	1				
place of delivery	0.1117 (0.000)	0.1122 (0.000)	0.9086 (0.000)	1			
Women's age	0.0691 (0.000)	-0.0149 ().501)	0.0702 (0.000)	-0.0237 (0.2724)	1		
Women's age square	0.0504 (0.004)	-0.0241 (0.274)	0.0211 (0.139)	-0.0356 (0.099)	0.9895 (0.000)	1	
Educational level	0.0431 (0.003)	0.1196 (0.000)	0.0016 (0.912)	0.3695 (0.000)	-0.2344 (0.000)	-0.2289 (0.000)	1

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Partners educ. level	**0.0813 (0.000)**	**0.1342 (0.000)**	**0.1587 (0.000)**	**0.3900 (0.000)**	**0.0011 (0.952)**	**-0.0035 (0.842)**	**0.6098 (0.000)**	**1**				
Sex house-hold head	0.0415 (0.004)	-0.0383 (0.083)	0.0618 (0.000)	-0.1190 (0.000)	0.0096 (0.501)	0.0035 (0.806)	-0.1827 (0.000)	-0.1980 (0.000)	1			
No. women household	-0.0058 (0.685)	-0.0818 (0.002)	0.0174 (0.223)	-0.1723 (0.000)	0.0139 (0.329)	0.0286 (0.045)	-0.2206 (0.000)	-0.2831 (0.000)	0.3256 (0.000)	1		
Age house-hold head	-0.0513 (0.003)	-0.0302 (0.172)	-0.1540 (0.000)	-0.0382 (0.78)	0.0612 (0.000)	0.1052 (0.000)	-0.0049 (0.732)	-0.0620 (0.005)	0.1451 (0.000)	0.3477	1	
Residency	-0.0113 (0.428	-0.0730 (0.009)	-0.818 (0.000)	-0.4079 (0.000)	0.0345 (0.013)	0.0402 (0.005)	-0.3341 (0.000)	-0.3218 (0.000)	0.1499 (0.000)	0.1822 (0.000)	0.0128 0.368	1

Note: P values in parentheses

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Source: Author's Calculation

Continuation table 18

Variables	Cont. use	Timing First ANC	Skilled Del.	Place Del	Wealth quintile	No. living children	Birth order	Ethnicity	Religion	Eco-zone	NSCPCCV
Contraceptive use	1										
Timing of ANC	0.043 (0.051)	1									
Skilled birth attendance	0.1264 (0.000)	0.1247 (0.000)	1								
Place delivery	0.1117 (0.000)	0.1122 (0.000)	0.9086 (0.000)	1							
Wealth quintile	0.0467 (0.001)	0.1618 (0.000)	0.0757 (0.000)	0.4949 (0.000)	1						
No. living	0.1143	-0.1013	0.2469	-0.1910	-0.2467	1					

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children	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)						
Birth order	0.0382	-0.0936	-0.1575	-0.1914	-0.2081	0.8291	1				
	(0.028)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)					
Ethnicity	-0.0088	-0.0593	-0.0138	-0.1714	-0.3487	0.0581	0.0554	1			
	(0.538)	(0.007)	(0.335)	(0.000)	(0.000)	(0.000)	(0.002				
Religion	-0.0449	-0.1204	-0.012	-0.1807	-0.2361	0.1176	0.0941	0.4804	1		
	(0.002)	(0.000)	(0.401)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)			
Eco-zone	-0.0302	-0.0979	-0.0031	-0.1237	-0.3051	0.0492	0.0572	0.4192	0.3133	1	
	(0.034)	(0.000)	(0.830)	(0.000)	(0.000)	(0.001)	(0.001)	(0.000)	(0.000)		
NSCPCCV	0.1070	0.1114	0.6481	0.0801	-0.1816	0.4293	-0.0829	0.0848	0.0969	0.0613	1
	(0.000)	(0.000)	(0.000)	(0.002)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	

Note: P values in parentheses

Source: Author's Calculation.

Table 18: The effects of Economic Power on Use of Reproductive health services:

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Marginal Effects Estimates from Probit Regressions.

	Contraceptive use		**First ANC**		**Skilled Delivery**		**Place of Delivery**	
variables	Beta	SE	Beta	SE	Beta	SE	Beta	SE
Economic power index	0.3679***	0.0997	0.4230***	0.1473	0.0148	0.0926	0.0583	0.1256
Woman's Age	0.0088	0.0075	0.0267*	0.0154	0.0391***	0.0086	0.0513***	0.0134
Woman Age square	-0.0001*	0.0001	-0.0004*	0.0002	-0.0006***	0.0001	-0.0006***	0.0002
Woman education								
primary	0.0931***	0.0224	0.0386*	0.0367	0.0597***	0.0226	0.0709**	0.0304
secondary	0.1474***	0.0284	0.0496	0.0460	0.0879***	0.0282	0.1236***	0.0384
Tertiary	0.1504***	0.0535	0.1681	0.1064	0.11307*	0.0620	0.0000	-
Partners education								
primary	0.0405	0.0291	-0.0029	0.0478	0.0962***	0.0292	0.1106***	0.0383
secondary	-0.0218	0.0296	-0.0269	0.0466	0.0763***	0.0290	0.0967**	0.0385
Tertiary	-0.0508	0.0431	-0.0813	0.0734	0.1207***	0.0454	0.1944***	0.0718
Sex of household	8.0000	0.0161	-0.0057	0.0293	0.0084	0.0175	-0.0172	0.0254

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head								
Age of household head	-0.0003	0.0007	0.0011	0.0011	0.0004	0.0007	0.0000	0.0009
Number of H.H	-0.0026	0.0032	-0.0050	0.0054	0.0033	0.0033	-0.0018	0.0046
Wealth Quintile: poorer	0.0038	0.0231	0.0211	0.0363	0.1302***	0.0220	0.1729***	0.0282
Wealth Quintile: middle	0.0495**	0.0251	0.0431	0.0430	0.1455***	0.0259	0.2106***	0.0339
Wealth Quintile: richer	0.0677***	0.0277	0.1295***	0.0477	0.17982***	0.0292	0.2972***	0.0387
Wealth Quintile: richest	0.0903***	0.0331	0.2484***	0.0616	0.2019***	0.0365	0.3910***	0.0574
Ethnicity: Ga/Dangme	0.0023	0.0312	-0.0076	0.0573	-0.0417	0.0336	-0.0507	0.0498
Ethnicity: Ewe/Guan	0.0705***	0.0206	-0.0199	0.0386	0.0219	0.0230	0.1048***	0.0329

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Ethnicity: Northern	0.0872***	0.0277	0.1009**	0.0459	0.1089***	0.0289	0.1292***	0.0403
Ethnicity: Others	0.0335	0.0443	0.12901*	0.0751	0.0411	0.0456	0.0357	0.0692
Moslem/Traditional	-0.0452**	0.0186	-0.07300**	0.0309	-0.0259	0.0193	-0.0184	0.0264
Rural Dummy	0.0102	0.0189	0.0571*	0.0344	-0.1032***	0.0204	-0.1409***	0.0289
Eco Zone: Capital City	0.0078	0.0272	-0.0654	0.0549	-0.0044	0.0318	0.0510	0.0528
Eco Zone: Middle Belt	-0.0032	0.0185	-0.0836***	0.0334	0.0475**	0.0198	0.1054***	0.0277
Eco Zone: Northern Belt	-0.0004	0.0293	-0.1200***	0.0480	0.0134	0.0301	0.0688*	0.0415
NSCPCCV	0.0482***	0.0172	0.1741***	0.0430	0.4688***	0.0130	0.0589*	0.0361
2nd/2-3 Birth Order			0.0362	0.0422	-0.0522**	0.0251	-0.1234***	0.0381
3rd/4-6 Birth Order			-0.0441	0.0470	-0.0635**	0.0274	-0.1650***	0.0423
4+/7+ Birth Order			-0.1070**	0.0509	-0.047**	0.0296	-0.2015***	0.0460
No.Living Children: *1-2*	0.0527	0.0347						

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No. Living Children: *3-4*	0.1204***	0.0379		
No. Living Children: *5+*	0.1753***	0.0431		
N	*2856*	*1651*	*2685*	*1687*
pseudo R2	*0.057*	*0.058*	*0.379*	*0.252*
χ2	*1360.39*	*131.31*	*1355.50*	*586.710*
Ll	*-3.526*	*-2.194*	*-4.998*	*-3.805*

*Source: Author's Calculation. Note: *** is significant at P<0.01, **is significant at P<0.05 and*

** is significant at P<0.10.*

Table 19: The effects of Family Decision on Use of Reproductive health services:

Marginal Effects Estimates from Probit Regressions.

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	Contraceptive use		First ANC		Skilled Delivery		Place of Delivery	
variables	Beta	SE	Beta	SE	Beta	SE	Beta	SE
Family decision index	0.0272	0.0228	-0.0052	0.0360	0.0007	0.0240	-0.0160	0.0300
Woman's Age	0.0104	0.0077	0.0358**	0.0148	0.0413***	0.0091	0.0476***	0.0127
Woman Age square	-0.0002	0.0001	-0.0005**	0.0002	-0.0007***	0.0001	-0.0006***	0.0002
Woman education								
primary	0.0582***	0.0214	0.0127	0.0338	0.0472**	0.0223	0.0472*	0.0273
secondary	0.0719***	0.0225	-0.0265	0.0373	0.0641***	0.0240	0.0897***	0.0301
Tertiary	0.0377	0.0468	0.0688	0.0975	0.11*	0.0597	0.1236	0.1079
Partners education								
primary	0.0592**	0.0285	0.0259	0.0447	0.1153***	0.0290	0.1226***	0.0347
secondary	0.0584***	0.0227	0.0442	0.0358	0.0764***	0.0236	0.1019***	0.0285
Tertiary	0.0579*	0.0329	0.0501	0.0569	0.1319***	0.0380	0.208***	0.0540
Sex of household	0.0130	0.0174	-0.0291	0.0296	-0.0177	0.0192	-0.0350	0.0250

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head								
Age of household head	-0.0009	0.0007	0.0006	0.0011	0.0005	0.0007	0.0008	0.0009
Number of H.H	-0.0020	0.0033	-0.0052	0.0053	0.0015	0.0035	-0.0037	0.0043
Wealth Quintile: poorer	-0.0088	0.0234	0.0209	0.0354	0.1385***	0.0229	0.1666***	0.0267
Wealth Quintile: middle	0.0260	0.0261	0.0238	0.0426	0.1565***	0.0274	0.2089***	0.0325
Wealth Quintile: richer	0.0517*	0.0284	0.1159***	0.0470	0.1955***	0.0309	0.2923***	0.0370
Wealth Quintile: richest	0.0390	0.0341	0.2203***	0.0598	0.1999***	0.0385	0.3559***	0.0525
Ethnicity: Ga/Dangme	0.0138	0.0329	-0.0091	0.0590	-0.0550	0.0369	-0.0437	0.0488
Ethnicity: Ewe and Guan	0.0628***	0.0214	-0.0103	0.0378	0.0316	0.0242	0.1043***	0.0314

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Ethnicity: Northern	0.0733***	0.0277	0.1108***	0.0439	0.0994***	0.0293	0.1035***	0.0369
Ethnicity: Others	0.0698*	0.0422	0.0901	0.0699	0.108**	0.0461	0.1266**	0.0623
Moslem/Traditional	-0.0554**	0.0188	-0.0546*	0.0300	-0.0295	0.0201	-0.0227	0.0250
Rural Dummy	0.0027	0.0196	0.0543	0.0338	-0.1174**	0.0216	-0.1478***	0.0275
Eco Zone: Capital City	0.0220	0.0276	-0.0444	0.0523	0.0043	0.0328	0.0390	0.0473
Eco Zone: Middle Belt	0.0003	0.0194	-0.0526	0.0332	0.0729***	0.0210	0.1079***	0.0267
Eco Zone: Northern Belt	0.0140	0.0295	-0.1334***	0.0461	0.0233	0.0308	0.0679*	0.0384
NSCPCCV	0.0484***	0.0180	0.1789***	0.0410	0.4666***	0.0142	0.0452	0.0335
2nd/2-3 Birth Order			0.0037	0.0409	-0.0405	0.0265	-0.094***	0.0354
3rd/4-6 Birth Order			-0.0618	0.0450	-0.0594**	0.0287	-0.1459***	0.0390
4+/7+ Birth Order			-0.1244***	0.0499	-0.0430	0.0316	-0.1699***	0.0430
No.LivingChildren:	0.0270	0.0345						

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1-2				
No. Living Children: *3-4*	0.1054***	0.0383		
No. Living Children: *5+*	0.144***	0.0440		
N	*2797*	*1739*	*2600*	*1814*
pseudo R2	*0.0454*	*0.0527*	*0.3518*	*0.2676*
χ2	*114.71*	*124.70*	*1243.20*	*665.61*
Ll	*-2.5531*	*-1.8145*	*-4.6548*	*-3.3942*

*Source: Author's Calculation. Note: *** is significant at P<0.01, **is significant at P<0.05 and*

** is significant at P<0.10.*

Table 20: The effects of Violence on Use of Reproductive health services:

Marginal Effects Estimates from Probit Regressions.

	Contraceptive use	**Timing First**	**Skilled Delivery**	**Place of Delivery**

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	Antenatal							
variables	Beta	SE	Beta	SE	Beta	SE	Beta	SE
Violence index	0.0005	0.0231	-0.0107	0.0389	0.0517***	0.0243	0.0543*	0.0320
Woman's Age	0.0124*	0.0072	0.0363***	0.0146	0.0383***	0.0083	0.046***	0.0125
Woman Age square	-0.0002**	0.0001	-0.0005**	0.0002	-0.0006***	0.0001	- 0.0006***	0.0002
Woman education								
primary	0.0573***	0.0205	0.0232	0.0337	0.0521***	0.0209	0.048*	0.0272
secondary	0.0814***	0.0212	-0.0185	0.0366	0.0700***	0.0223	0.095***	0.0295
Tertiary	0.0597	0.0440	0.0785	0.0961	0.0957*	0.0547	0.1152	0.1081
Partners education								
primary	0.0791***	0.0272	0.0284	0.0453	0.1001**	0.0278	0.1161***	0.0352
secondary	0.0609***	0.0215	0.0378	0.0355	0.0591**	0.0221	0.0905**	0.0284
Tertiary	0.0543*	0.0306	0.0483	0.0556	0.1233***	0.0345	0.2135***	0.0536
Sex of household head	0.0236***	0.0154	-0.0244	0.0277	0.0030	0.0168	-0.0290	0.0234

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Age of household head	-0.0006	0.0006	0.0002	0.0011	0.0003	0.0007	0.0001	0.0009
Number of H.H	-0.0017	0.0031	-0.0023	0.0052	0.0033	0.0032	-0.0014	0.0043
Wealth Quintile: poorer	0.0009	0.0222	0.0108	0.0350	0.1234***	0.0216	0.1541***	0.0267
Wealth Quintile: middle	0.0354**	0.0244	0.0276	0.0415	0.1366***	0.0253	0.1852***	0.0319
Wealth Quintile: richer	0.0542***	0.0266	0.1122***	0.0460	0.1739***	0.0284	0.2829***	0.0364
Wealth Quintile: richest	0.0557*	0.0319	0.2245***	0.0585	0.1889***	0.0353	0.3483***	0.0518
Ethnicity: Ga/Dangme	0.0021	0.0304	-0.0209	0.0556	-0.0525*	0.0332	-0.0521	0.0469
Ethnicity: Ewe and Guan	0.0593***	0.0197	-0.0195	0.0365	0.0158	0.0220	0.0888***	0.0303
Ethnicity: Northern	0.0706***	0.0263	0.1138**	0.0434	0.0764***	0.0274	0.08150***	0.0364

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Ethnicity: Others	0.0497	0.0400	0.0766	0.0684	0.0797**	0.0418	0.1238***	0.0610
Moslem/Traditional	-0.0408***	0.0180	-0.0641***	0.0300	-0.0220	0.0189	-0.0204	0.0249
Rural Dummy	0.0090	0.0182	0.0505***	0.0327	-0.1095***	0.0197	-0.1453***	0.0266
Eco Zone: Capital City	0.0131	0.0255	-0.0521	0.0505	0.0024	0.0298	0.0374	0.0461
Eco Zone: Middle Belt	-0.0036	0.0179	-0.0475**	0.0321	0.0672***	0.0191	0.1112***	0.0258
Eco Zone: Northern Belt	0.0091	0.0284	-0.1302***	0.0465	0.0275	0.0293	0.0761**	0.0387
NSCPCCV	0.0391**	0.0167	0.1702***	0.0406	0.4623***	0.0126	0.0397***	0.0332
2nd/2-3 Birth Order			0.0114	0.0396	-0.0423*	0.0239	-0.103***	0.0345
3rd/4-6 Birth Order			-0.0639***	0.0437	-0.0529**	0.0261	-0.1473***	0.0384
4+/7+ Birth Order			-0.1249**	0.0479	-0.0370*	0.0284	-0.1813***	0.0420
No.LivingChildren:	0.0395	0.0321						

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1-2				
No. Living Children: *3-4*	0.1194***	0.0356		
No. Living Children: *5+*	0.1727***	0.0409		
N	*3085*	*1794*	*2879*	*1872*
pseudo R2	*0.0483*	*0.0514*	*0.3742*	*0.2622*
χ2	*131.71*	*125.47*	*1446.63*	*670.52*
Ll	*-2.7255*	*-1.7945*	*-4.7840*	*-3.3707*

*Source: Author's Calculation. Note: *** is significant at P<0.01, **is significant at P<0.05 and * is significant at P<0.10.*

Table 21: The effects of Autonomy on Use of Reproductive health services:

Marginal Effects Estimates from Probit Regressions.

	Contraceptive use	**First ANC**	**Skilled Delivery**	**Place of Delivery**

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variables	Beta	SE	Beta	SE	Beta	SE	Beta	SE
autonomy index	-0.0282	0.0239	-0.0732	0.0411	-0.039	0.0255	0.0248	0.0336
Woman's Age	0.0130*	0.0070	0.0331*	0.0144	0.0371***	0.0082	0.0432***	0.0123
Woman Age square	-0.0002***	0.0001	-0.0005**	0.0002	-0.0006***	0.0001	-0.0006***	0.0002
Woman education								
primary	0.0588***	0.0199	0.0156***	0.0330	0.0468***	0.0205	0.0507**	0.0266
secondary	0.0797***	0.0208	-0.023***	0.0363	0.0669***	0.0220	0.0919***	0.0292
Tertiary	0.0542	0.0430	0.0875	0.0954	0.0970*	0.0539	0.1244	0.1077
Partners education								
primary	0.0703***	0.0265	0.0342**	0.0443	0.1019***	0.0272	0.1186***	0.0344
secondary	0.0600***	0.0210	0.0351***	0.0350	0.0620***	0.0217	0.0955***	0.0279
Tertiary	0.0541*	0.0300	0.0344*	0.0552	0.1253***	0.0342	0.2191***	0.0533
Sex of household head	0.0233	0.0152	-0.0287***	0.0277	-0.0002	0.0167	-0.0330*	0.0234
Age of household head	-0.0007	0.0006	0.0005	0.0010	0.0002	0.0006	-0.0001	0.0008

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Number of H.H	-0.0012	0.0030	-0.0038	0.0051	0.0031	0.0031	-0.0010	0.0042
Wealth Quintile: poorer	0.0014	0.0218	0.0209	0.0347	0.1316***	0.0213	0.1560***	0.0264
Wealth Quintile: middle	0.0338	0.0239	0.0373*	0.0411	0.1430***	0.0249	0.1869***	0.0315
Wealth Quintile: richer	0.0546**	0.0262	0.1221**	0.0456	0.1814***	0.0281	0.2834***	0.0361
Wealth Quintile: richest	0.0573*	0.0314	0.2390*	0.0584	0.2014***	0.0350	0.3586***	0.0520
Ethnicity: Ga/Dangme	0.0703***	0.0265	-0.0097	0.0562	-0.0474***	0.0332	-0.0415	0.0473
Ethnicity: Ewe and Guan	0.0600***	0.0210	-0.0268***	0.0366	0.0184	0.0220	0.0965***	0.0304
Ethnicity: Northern	0.0541*	0.0300	0.1117**	0.0432	0.0766***	0.0271	0.0865**	0.0362
Ethnicity: Others	0.0233	0.0152	0.0716	0.0679	0.0748*	0.0414	0.1127*	0.0602
Moslem/Traditional	-0.0007	0.0006	-0.0664***	0.0294	-0.0254	0.0185	-0.0227	0.0245

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Rural Dummy	-0.0012	0.0030	0.0526	0.0326	-0.1078***	0.0195	-0.1432***	0.0265
Eco Zone: Capital City	0.0014	0.0218	-0.0427	0.0508	0.0091	0.0298	0.0454	0.0464
Eco Zone: Middle Belt	0.0338	0.0239	-0.0502	0.0322	0.0645***	0.0191	0.1092***	0.0258
Eco Zone: Northern Belt	0.0546**	0.0262	-0.1259	0.0457	0.0221	0.0286	0.0709*	0.0379
NSCPCCV	0.0573*	0.0314	0.1696***	0.0401	0.4619***	0.0125	0.0461**	0.0327
2nd/2-3 Birth Order			0.0012	0.0391	-0.0418*	0.0236	-0.1031***	0.0340
3rd/4-6 Birth Order			-0.0621***	0.0432	-0.0502***	0.0257	-0.1464***	0.0378
4+/7+ Birth Order			-0.1281***	0.0474	-0.0379	0.0279	-0.1816***	0.0414
No.Living Children: *1-2*	0.0433	0.0315						
No. Living Children: *3-4*	0.1187***	0.0349						

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No. Living Children: 5+	0.1725*** 0.0399			
N	*3173*	*1839*	*2954*	*1921.00*
pseudo R2	*0.0507*	*0.0519*	*0.3743*	*0.2631*
χ2	*141.20*	*129.96*	*1480.30*	*692.12*
Ll	*-2.6812*	*-1.5161*	*-4.4108*	*0.0000*

*Source: Author's Calculation. Note: *** is significant at P<0.01, **is significant at P<0.05 and*

** is significant at P<0.10.*

Table 22: The effects of Individual Economic Variables on Use of Reproductive health services: Marginal Effects Estimates from Probit Regressions.

	Contraceptive use	**Timing First Antenatal**	**Skilled Delivery**	**Place of Delivery**

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variables	Beta	SE	Beta	SE	Beta	SE	Beta	SE
Gender Educ. Diff.	-0.0300	0.0039	-0.0130*	0.0071	0.0043*	-0.900	-0.0069	0.0062
Type of earnings	0.03***	0.0107	0.0264*	0.0171	0.0134	0.0108	0.0186	0.0142
Woman Working	0.1657***	0.0660	0.1212*	0.0763	0.0795*	0.0465	-0.0933	0.0664
Woman's Age	0.0087	0.0075	0.0270*	0.0154	0.0386***	0.0086	0.0506***	0.0134
Woman Age square	-0.0002*	0.0001	-0.0004*	0.0002	-0.0006***	0.0001	-0.0007***	0.0002
Woman education								
primary	0.0759***	0.0259	0.0555	0.0441	0.0729***	0.0272	0000***	0.0371
secondary	0.1082***	0.0406	0.0871	0.0720	0.1183***	0.0439	0.1705***	0.0619
Tertiary	0.0944	0.0682	0.2261*	0.1357	0.1572**	0.0804	0.0000	
Partners education								
primary	0.0609*	0.0326	-0.0217	0.0551	0.0813	0.0338	0000*	0.0459
secondary	0.0233	0.0442	-0.0683	0.0781	0.0426	0.0478	0.0433	0.0678
Tertiary	0.013	0.0634	-0.1408	0.1164	0.0717	0.0714	0.1160	0.1083
Sex of household head	0.0198	0.0161	-0.0062	0.0293	0.0080	0.0175	-0.0181	0.0254

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Age of household head	-0.0002	0.0007	0.0010	0.0011	0.0004	0.0007	0.0000	0.0009
Number of H.H	-0.0027	0.0032	-0.0049	0.0054	0.0033	0.0033	-0.0017	0.0046
Wealth Quintile: poorer	0.0046	0.0231	0.0204	0.0363	0.13066***	0.0220	0.1732***	0.0282
Wealth Quintile: middle	0.0509*	0.0251	0.0436	0.0430	0.145792***	0.0259	0.2110***	0.0339
Wealth Quintile: richer	0.0700***	0.0277	0.1301***	0.0478	0.1827***	0.0292	0.3003***	0.0387
Wealth Quintile: richest	0.0933**	0.0331	0.2493***	0.0617	0.2036***	0.0365	0.4042***	0.0574
Ethnicity: Ga/Dangme	0.0013**	0.0312	-0.0064	0.0573	-0.0420	0.0336	-0.0499	0.0497
Ethnicity: Ewe and Guan	0.0706***	0.0206	-0.0186	0.0387	0.0217	0.0230	0.1047***	0.0329
Ethnicity: Northern	0.0872***	0.0278	0.1005**	0.0460	0.1130***	0.0290	0.1348***	0.0404

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Ethnicity: Others	0.0325	0.0444	0.1323*	0.0751	0.0432	0.0455	0.0377	0.0690
Moslem/Traditional	-0.0454**	0.0186	-0.0740**	0.0309	-0.0251	0.0192	-0.0171	0.0264
Rural Dummy	0.0093	0.0189	0.0580*	0.0344	-0.1036***	0.0204	-0.1406***	0.0289
Eco Zone: Capital City	0.0081	0.0272	-0.0649	0.0549	-0.0051	0.0318	0.0505	0.0528
Eco Zone: Middle Belt	-0.0042	0.0186	-0.0845***	0.0335	0.0444**	0.0198	0.1025***	0.0277
Eco Zone: Northern Belt	-0.0008	0.0295	-0.1221***	0.0483	0.0057	0.0303	0.0578	0.0418
NSCPCCV	0.0475***	0.0172	0.1751***	0.0430	-0.0129***	0.0252	0.0134*	0.0375
2nd/2-3 Birth Order			0.0374	0.0423	-0.0516**	0.0251	-0.1211***	0.0380
3rd/4-6 Birth Order			-0.0419	0.0470	-0.0647**	0.0274	-0.1658***	0.0423
4+/7+ Birth Order			-0.1059	0.0509	-0.0426	0.0295	-0.1988***	0.0459
No.Living Children: *1-2*	0.0532*	0.0347						
No. Living	0.1215***	0.0380						

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Children: *3-4*				
No. Living Children: *5+*	0.1769*** 0.0432			
N	*2856*	*1651*	*2685*	*1687.0000*
pseudo R2	*0.0581*	*0.0587*	*0.3808*	*0.2542*
χ2	*146.98*	*131.95*	*1360.39*	*590.9800*
Ll	*-3.4531*	*-1.9437*	*-4.6729*	*-3.4237*

*Source: Author's Calculation. Note: *** is significant at P<0.01, **is significant at P<0.05 and * is significant at P<0.10.*

Table 23: The effects of Individual Family Decision Variables on Use of Reproductive health services: Marginal Effects Estimates from Probit Regressions.

	Contraceptive use	**Timing First Antenatal**	**Skilled Delivery**	**Place of Delivery**

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	Beta	SE	Beta	SE	Beta	SE	Beta	SE
Final say: own health care	0.0227	0.0174	-0.0362	0.0282	-0.0083	0.0185	0.0011	0.0232
Final say: large purchasing	-0.0019	0.0169	-0.0549***	0.0283	0.0135	0.0184	0.0212	0.0234
final say purcha-sing daily needs	-0.0431***	0.0199	0.0513*	0.0323	0.0145	0.0214	0.0097	0.0267
final say visit family /relatives	0.062***	0.0213	0.0592*	0.0326	-0.0254	0.0217	-0.0641**	0.0273
Woman's Age	0.0113***	0.0077	0.0367***	0.0149	0.0405***	0.0091	0.0462***	0.0127
Woman Age square	-0.0002***	0.0001	-0.0005***	0.0002	-0.0007***	0.0001	-0.0006***	0.0002
Woman education								
primary	0.0613***	0.0214	0.0118	0.0337	0.0465**	0.0224	0.0451	0.0273
secondary	0.0748***	0.0225	-0.0262	0.0372	0.0633**	0.0241	0.0884***	0.0301
Tertiary	0.0406	0.0467	0.0748	0.0970	0.1099*	0.0597	0.1195	0.1079
Partners education								

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primary	0.0603***	0.0284	0.0269	0.0447	0.1151***	0.0290	0.1207***	0.0346
secondary	0.058***	0.0227	0.0398	0.0357	0.0776***	0.0237	0.1046***	0.0284
Tertiary	0.0543*	0.0329	0.0406	0.0568	0.1337***	0.0380	0.2111***	0.0537
Sex of household head	0.0132	0.0173	-0.0287	0.0295	-0.0173	0.0192	-0.0337	0.0249
Age of household head	-0.0008	0.0007	0.0007	0.0011	0.0006	0.0007	0.0008	0.0009
Number of H.H	-0.0024	0.0033	-0.0054	0.0053	0.0017	0.0035	-0.0036	0.0043
Wealth Quintile: poorer	-0.0112	0.0234	0.0202	0.0352	0.1388***	0.0229	0.1674***	0.0266
Wealth Quintile: middle	0.0252	0.0260	0.0266	0.0425	0.1561***	0.0274	0.2085***	0.0325
Wealth Quintile: richer	0.0519*	0.0284	0.1209**	0.0469	0.1947***	0.0309	0.2899***	0.0369
Wealth Quintile: richest	0.038***	0.0340	0.2208***	0.0596	0.1997***	0.0385	0.3562***	0.0525

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Ethnicity: Ga/Dangme	0.0165	0.0329	-0.0138	0.0589	-0.0554***	0.0369	-0.0419	0.0488
Ethnicity: Ewe and Guan	0.0664***	0.0214	-0.0094	0.0378	0.0305	0.0242	0.1031***	0.0314
Ethnicity: Northern	0.0777***	0.0276	0.1054**	0.0439	0.0985***	0.0294	0.1029***	0.0369
Ethnicity: Others	0.0717*	0.0421	0.0871	0.0696	0.1086**	0.0461	0.1267***	0.0623
Moslem/Traditional	0.0717***	0.0188	-0.0514*	0.0299	-0.0295***	0.0201	-0.0224	0.0250
Rural Dummy	0.0717	0.0196	0.0539**	0.0337	-0.1176***	0.0216	-0.1475***	0.0274
Eco Zone: Capital City	0.0717	0.0276	-0.0469	0.0522	0.0052	0.0328	0.0417	0.0473
Eco Zone: Middle Belt	0.0717	0.0194	-0.0493**	0.0332	0.0735***	0.0211	0.1086***	0.0267
Eco Zone: Northern Belt	0.0717	0.0295	-0.1355***	0.0462	0.0249	0.0309	0.0699*	0.0385
NSCPCCV	0.0717**	0.0179	0.1833***	0.0409	0.4666***	0.0142	0.0446	0.0334
2nd/2-3 Birth Order			-0.0056	0.0409	-0.0387**	0.0266	-0.089***	0.0354

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3rd/4-6 Birth Order			-0.0698**	0.0449	-0.0585***	0.0287	-0.1435***	0.0389
4+/7+ Birth Order			-0.1342**	0.0498	-0.041*	0.0317	-0.1649***	0.0430
No.Living Children: *1-2*	0.0265	0.0345						
No. Living Children: *3-4*	0.1049**	0.0382						
No. Living Children: *5+*	0.1426***	0.0439						
N	*2797*		*1739*		*2686*		*1688*	
pseudo R2	*0.0502*		*0.0568*		*0.3808*		*0.2546*	
$\chi 2$	*126.87*		*134.52*		*1360.81*		*592.18*	
Ll			*-1.9517*		*-4.6693*		*-3.4228*	

*Source: Author's Calculation. Note: *** is significant at P<0.01, **is significant at P<0.05 and*

** is significant at P<0.10.*

Table 24: The effects of Individual Violence Variables on Use of Reproductive health services: Marginal Effects Estimates from Probit Regressions.

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	Contraceptive use		Timing First Antenatal		Skilled Delivery		Place of Delivery	
Variables	Beta	SE	Beta	SE	Beta	SE	Beta	SE
Goes out without telling him	0.0086	0.0221	-0.0081	0.0370	-0.0050	0.8280	-0.0174	0.0302
Neglects the children	0.0272	0.0212	-0.0218	0.0367	0.0269	0.2300	0.0392	0.0294
Argues with the husband	-0.0268*	0.0205	0.0472*	0.0342	0.0300	0.1610	0.0334	0.0283
Refuses sex with husband	-0.0148	0.0225	-0.0091	0.0372	0.0184	0.4370	0.0077	0.0312
Burns the food	-0.0007	0.0269	-0.0286	0.0445	-0.0397	0.1600	-0.0276	0.0368
Woman's Age	0.0123*	0.0072	0.0361***	0.0147	0.0383**	0.0000	0.0461***	0.0125
Woman Age square	-0.0002**	0.0001	-0.0005***	0.0002	-0.0006***	0.0000	***-0.0006	0.0002
Woman education								
primary	0.0578***	0.0205	0.0234	0.0338	0.0531***	0.0110	0.0502*	0.0273
secondary	0.0819***	0.0212	-0.0183	0.0366	0.0706***	0.0020	0.0960***	0.0295
Tertiary	0.05968*	0.0439	0.0780	0.0959	0.0951***	0.0830	0.1132	0.1080

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Partners education								
primary	0.0793***	0.0272	0.0274	0.0453	0.1001**	0.0000	0.1164***	0.0352
secondary	0.0612***	0.0216	0.0352	0.0355	0.0588***	0.0080	0.0884***	0.0284
Tertiary	0.0545*	0.0306	0.0460	0.0556	0.1224***	0.0000	0.2095***	0.0535
Sex of household head	0.0231***	0.0154	-0.0236	0.0277	0.0028**	0.8690	-0.0296***	0.0234
Age of household head	-0.0007	0.0006	0.0001	0.0010	0.0003***	0.6920	0.0000	0.0009
Number of H.H	-0.0015	0.0031	-0.0026	0.0052	0.0033***	0.2960	-0.0014	0.0043
Wealth Quintile: poorer	0.0025	0.0222	0.0101	0.0349	0.1237***	0.0216	0.1546***	0.0267
Wealth Quintile: middle	0.0381**	0.0243	0.0249	0.0416	0.1363***	0.0253	0.1849***	0.0319
Wealth Quintile: richer	0.0556**	0.0266	0.1106**	0.0460	0.1745**	0.0283	0.28512***	0.0364
Wealth Quintile: richest	0.0556*	0.0318	0.2213***	0.0585	0.1893***	0.0353	0.3493***	0.0518
Ethnicity: Ga/Dangme	0.0556	0.0303	-0.0172	0.0557	-0.0499***	0.1330	-0.0505	0.0469
Ethnicity: Ewe and Guan	0.0556***	0.0197	-0.0186	0.0365	0.0154***	0.4850	0.0876034***	0.0303

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Ethnicity: Northern	0.0556**	0.0264	0.1124***	0.0435	0.0767**	0.0050	0.0797**	0.0365
Ethnicity: Others	0.0556	0.0400	0.0768	0.0685	0.0769***	0.0670	0.1179***	0.0612
Moslem/Traditional	0.0556***	0.0180	-0.0641***	0.0299	-0.0219**	0.2440	-0.0208	0.0249
Rural Dummy	0.0556	0.0182	0.0485**	0.0327	-0.1099**	0.0000	-0.1455***	0.0266
Eco Zone: Capital City	0.0556	0.0255	-0.0541	0.0504	-0.0005**	0.9870	0.0337	0.0460
Eco Zone: Middle Belt	0.0556	0.0179	-0.0459***	0.0321	0.0668**	0.0000	0.1109***	0.0258
Eco Zone: Northern Belt	0.0556	0.0284	-0.1298***	0.0465	0.0274**	0.3490	0.0770**	0.0387
NSCPCCV	0.0556***	0.0167	0.1732***	0.0406	0.4637***	0.0000	0.0427	0.0333
2nd/2-3 Birth Order			0.0115	0.0397	-0.0426***	0.0740	-0.1022***	0.0345
3rd/4-6 Birth Order			-0.0622***	0.0437	-0.0533**	0.0410	-0.1472***	0.0384
4+/7+ Birth Order			-0.1241***	0.0479	-0.0382**	0.1790	-0.1814***	0.0420
No. Living Children: *1-2*	0.0556	0.0321						
No. Living Children: *3-4*	0.0556***	0.0356						
No. Living	0.0556***	0.0409						

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Children: *5+*				
N	*3085*	*1794*	*2879*	*1872*
pseudo R2	*0.0497*	*0.0523*	*0.3754*	*0.2633*
χ2	*135.55*	*127.69*	*1450.96*	*673.43*
Ll	*-2.6928*	*-1.7612*	*-4.6997*	*-3.3041*

*Source: Author's Calculation. Note: *** is significant at P<0.01, **is significant at P<0.05 and*

** is significant at P<0.10.*

Table 25: The effects of Individual Autonomy Variables on Use of Reproductive health services: Marginal Effects Estimates from Probit Regressions.

	Contraceptive use	**Timing First Antenatal**	**Skilled Delivery**	**Place of Delivery**

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	Beta	SE	Beta	SE	Beta	SE	Beta	SE
Permission to go	-0.0075	0.0247	0.0561	0.0404	0.0182	0.0261	0.0252	0.0342
No female provider	0.0023	0.0176	-0.0117	0.0306	-0.0251	0.0186	-0.0137	0.0253
Not going alone	-0.0230	0.0187	-0.0721**	0.0332	-0.0142	0.0202	0.0247	0.0272
Woman's Age	0.0129*	0.0070	0.0315**	0.0144	0.0365***	0.0082	0.0429***	0.0123
Woman Age square	-0.0002***	0.0001	-0.0004**	0.0002	-0.0006***	0.0001	-0.0006***	0.0002
Woman education								
primary	0.0584***	0.0199	0.0179	0.0329	0.0476***	0.0204	0.0515***	0.0266
secondary	0.0797***	0.0207	-0.0215	0.0362	0.0671***	0.0219	0.0918***	0.0292
Tertiary	0.0537	0.0429	0.0822	0.0955	0.0973*	0.0539	0.1226	0.1071
Partners education								
primary	0.0702**	0.0266	0.0267	0.0444	0.1006***	0.0273	0.1194***	0.0345
secondary	0.0596***	0.0210	0.0316	0.0351	0.0625***	0.0218	0.0978***	0.0280
Tertiary	0.0543913*	0.0301	0.0406	0.0553	0.1265***	0.0342	0.221***	0.0533
Sex of household head	0.0234506***	0.0152	-0.0289	0.0277	-0.0003	0.0167	-0.0324	0.0234
Age of household head	0.0000	0.0006	0.0005	0.0010	0.0002	0.0006	0.0000	0.0008

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Number of H.H	-0.0012	0.0030	-0.0040	0.0051	0.0031	0.0031	-0.0010	0.0042
Wealth Quintile: poorer	0.0014	0.0218	0.0204	0.0346	0.1313***	0.0213	0.1555***	0.0264
Wealth Quintile: middle	0.0335*	0.0239	0.0342	0.0410	0.1425***	0.0249	0.1872***	0.0315
Wealth Quintile: richer	0.0551**	0.0262	0.1222**	0.0456	0.1812***	0.0281	0.2834***	0.0360
Wealth Quintile: richest	0.0583*	0.0314	0.2426***	0.0584	0.2017***	0.0350	0.3572***	0.0520
Ethnicity: Ga/Dangme	0.0020	0.0301	-0.0125	0.0561	-0.0476***	0.0332	-0.0415	0.0472
Ethnicity: Ewe and Guan	0.0585***	0.0195	-0.0265	0.0366	0.0188	0.0219	0.0973***	0.0304
Ethnicity: Northern	0.0705**	0.0259	0.1167**	0.0432	0.0789***	0.0271	0.0881***	0.0362
Ethnicity: Others	0.0495	0.0394	0.0727	0.0679	0.0764*	0.0414	0.1155***	0.0602
Moslem/Traditional	-0.0482**	0.0176	-0.0669***	0.0294	-0.0264***	0.0185	-0.0241	0.0245
Rural Dummy	0.0084	0.0179	0.0523**	0.0326	-0.1078***	0.0190	-0.1429***	0.0265
Eco Zone: Capital City	0.0167	0.0252	-0.0406	0.0508	0.0085	0.0298	0.0438	0.0463
Eco Zone: Middle Belt	-0.0003	0.0177	-0.0486***	0.0322	0.0641***	0.0191	0.1079***	0.0258

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Eco Zone: Northern Belt	0.0069	0.0278	-0.1196**	0.0459	0.0258	0.0287	0.0746***	0.0381
NSCPCCV	0.0389**	0.0163	0.1679***	0.0401	0.4611***	0.0126	0.0445	0.0327
2nd/2-3 Birth Order			0.0026	0.0391	-0.0404*	0.0236	-0.102***	0.0340
3rd/4-6 Birth Order			-0.0588	0.0431	-0.049**	0.0257	-0.1462***	0.0378
4+/7+ Birth Order			-0.1259**	0.0473	-0.0367*	0.0279	-0.1811***	0.0413
No. Living children: *1-2*	0.0433*	0.0315						
No. Living Children: *3-4*	0.1194***	0.0349						
No. Living Children: *5+*	0.1727***	0.0399						
N	3173		1839		2954		1921	
pseudo R2	0.0509		0.0537		0.3747		0.2635	
$\chi 2$	141.8400		134.5100		1481.8900		693.2800	

*Source: Author's Calculation. Note: *** is significant at P<0.01, **is significant at P<0.05 and*

** is significant at P<0.10.*

Table 26: The effects of Empowerment Indices without the Inclusion of control Variables:

Marginal Effects Estimates from Probit Regressions.

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Indices	**Contraceptive use**		**First ANC Visits**		**Skilled Delivery**		**Place of Delivery**	
Economic	Beta	SE	Beta	SE	Beta	SE	Beta	SE
power	0.1874***	0.0632	0.3597***	0.1051	0.0678	0.0801	0.2185**	0.1051
N	2862		1657		2862		1733	
pseudo R2	0.0035		0.0051		0.0002		0.0018	
χ2	8.87		11.52		0.72		4.29	
Ll	-1.4753		-0.3851		-0.4743		-0.2088	
Family	0.0421*	0.02183	0.0415	0.0355	0.0037	0.028	0.0995***	0.0343
Decision								
N	2939		1820		2939		1901	
pseudo R2	0.0014		1.36		0.8956		0.0032	
χ2	3.75		0.0006		0.02		8.29	
Ll	-1.0996		0.1232		-0.2962		-0.0301	
Violence	0.0124	0.0171	0.0948***	0.0358	0.0529**	0.02215	0.2433***	0.0338
N	4717		1991		4717		2082	

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pseudo R2	0.0001		0.0026		0.001		0.0171	
χ2	0.4668		6.95		5.74		48.65	
Ll	-1.1328		0.0085		-0.7456		-0.3099	
Autonomy	0.0053	0.0181	-0.0266	0.0399	0.0672***	0.0237	0.1987***	0.0378
N	*4897*		*2040*		*4897*		*2135*	
pseudo R2	*0*		*0.0002*		*0.0044*		*0.0091*	
χ2	*0.09*		*0.44*		*8.11*		*26.69*	
Ll	*-1.1235*		*0.2491*		*-0.8054*		*-0.2525*	

*Source: Author's Calculation. Note: *** is significant at P<0.01, **is significant at P<0.05 and*

** is significant at P<0.10.*

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CHAPTER SIX

SUMMARY, CONTRIBUTIONS AND CONCLUSIONS

6.0 Introduction

Based on the findings of univariate, pairwise bivariate correlation and multivariate analysis of women's empowerment and use of reproductive health services, this section discusses the summary of the study, contributions and limitation of the study.

6.1 Summary

The study began with its argument based on the International Conference on Population and Development held in Egypt-Cairo in (1994) which strongly affirmed that women should be empowered to practice control over their health and reproductive health. In this study, global sub-regional and Ghana's maternal mortality and morbidity statistics were discussed. From the discussion, it was found out that maternal mortality and problems affecting reproductive health care are preventable through the use of modern contraceptive that prevents unwanted pregnancies, timing of first antenatal care, skilled birth delivery and health facility delivery. The motivation for the study is based on the argument that, access to economic resources dominates the women's empowerment literature, neglecting the informal institution which can also equally lead to or constrain women's empowerment. Furthermore, the study also discussed the role of women's empowerment in the Ghanaian context and the possible effect it could have on utilisation of reproductive health services. This entails background issues of empowerment in Ghana which included the provisions made in the 1992 constitution concerning protecting the

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fundamental human rights of individuals and especially women and Ghana's relationship with the international world by being a signatory to several protocols all of which aim at empowering women. Demographic and Health Surveys in developing nations also collect information on women's empowerment and their health status in Ghana. The study adopted the definition of empowerment by Kabeer and England to define empowerment as women's ability to exercise power within the gender system. From this definition, empowerment was conceptualized based on two dimensions which included access to economic resources and social norms.

Through literature reviewed and the Ghana Demographic and Health Survey information, access to economic resources variables were selected and they included gender educational difference, type of earnings from work and whether the woman was working at the time of the survey. Social norms variables include household decision making, violence and women's autonomy. Previous studies on empowerment and reproductive health had shown mixed result because empowerment varies from one context to the other. While most of the empowerment studies and reproductive health care services are heavily concentrated in Asian context few studies have been done in Africa and Sub-Saharan African countries. Aside the empowerment variables there are socio-demographic variables which equally have an effect on reproductive health which has also been discussed. To provide appropriate answers to the study's research questions, the study used the 2008 Ghana Demographic and Health Survey data. Stata version 13.0 was used to compute empowerment index for the variables selected from the data set. The empowerment indices computed were later used in a regression model to find out whether they were significant with use of reproductive health care variables selected. The findings showed that women's economic power was positive and significantly associated with modern contraceptive use and timing of first antenatal visits, while rejection of violence was significant with skilled birth

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attendance. Furthermore, the findings and discussion of women's empowerment in reproductive health were positioned in existing literature.

6.2 Contribution to Literature

Consistent with the previous literature, the findings confirm that socio-economic variables that were used as controls such as women's age, women's education and partner's education at primary and secondary school levels, higher and highest wealth quintile, highest number of living children, birth order, ethnicity, religion, ecological zones and complete child vaccination have an effect on utilisation of reproductive health care services.

In addition, the results support the argument that women's empowerment has an effect on utilisation of reproductive health services. Furthermore, women's economic power was found to be associated with modern contraceptive use and timing of first antenatal visits. In addition, rejection of violence against women was also found to be associated with skilled birth delivery, and place of delivery.

Certainly, social norm as explained in the study has effect on reproductive health. The findings stress the multi-dimensionality of women's empowerment and support the view that apart from access to resources there are other dimensions of empowerment that can be developed. The computation of empowerment index to depict informal institutions also contributes enormously to the literature of gender empowerment through the use of the 2008 Ghana DHS data. The concept of social norms is very difficult to capture, therefore using variables from the Ghana DHS data for analysis is an improvement. Nevertheless, the finding of this study contributes to the discourse on women's empowerment and adds to the scarce literature on sexual and reproductive health issues in Sub-Saharan African countries and Ghana in particular

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6.3 Policy Implications

After the International Conference on Population and Development (ICPD) in Cairo in (1994), the government's response to improving the low levels of utilisation of reproductive health services, particularly the use of modern contraceptive use and timing of first antenatal visits has been improving availability and accessibility to an essential package of reproductive health services. However, there is the need to concentrate on the other aspect of empowering women to have control over their health as well as their sexual and reproductive rights. From the findings, efforts to reduce mortality and morbidity by the government must also address societal and cultural factors that impact women's health. Indeed, women's access and control over resources in society, and lack of decision-making power contribute significantly to adverse pregnancy outcomes. Therefore, policies should put emphasis on programs that will increase women's status and their empowerment. Informal norms, such as those that require a woman to first obtain permission from her husband, may also discourage women and girls from seeking needed health care services, particularly if they are of sensitive nature such as contraceptive use, seeking for skilled birth delivery and health facility delivery should be revised.

6.4 Limitations of the Study

The measurement of empowering of women is mostly a difficult task for the reason that it is a process; empowerment is also dimensionality in nature and the concept functions at various levels (Alsop, Bertelsen, and Holland, 2006). As a result, there is no current scientific consensus on the measuring of empowering of women. Although, access to economic resources and social norms serve as a form of empowerment, the variables used under each of the dimensions in this study analysis might not be the only validated measure of empowerment, however, it will

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provide an insight into the mechanism underlying the measurement of the empowerment indices. More so, the study sample is cross sectional and this makes it not possible to determine the direction of causality between the empowerment measures and the reproductive health care services. The variables used from the data set were self-reported and thus subject to the desirability of the respondents.

6.5 Recommendations for future Research

A longitudinal data will create a cohort database that could be used to help better understand the association between empowerment and reproductive health outcomes. Notwithstanding the limitations discussed above, the study has convincing strengths. To begin with, the sample size for the study was large and it includes nationwide coverage of all the ten regions in Ghana, giving the study sufficient control. More so, the statistical tools used for collecting the data were standardized, have been used in different settings and piloted, hence increasing the comparability and validity of the results. Future research can examine the association between economic power and social norms of empowerment and inform government or policy makers about the possible effects of increasing women's economic opportunities.

6.6 Conclusion

With regards to the findings and the discussions, the study was challenging and educational. It is therefore established that women who have an increase in economic power and social norms as a means of empowerment in Ghana utilise reproductive health services. Although family decision was not associated with all the four reproductive health services, the individual variables showed that, final say on large purchases was associated with timing of first antenatal visit, final say on

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large purchases showed a negative association with timing of first antenatal visit and final say on a visit to family or relatives was associated with modern contraceptive use. Additionally, women who reject violence against them were associated with skilled birth attendance.

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