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MATERNAL EDUCATION AND BIRTH REGISTRATION IN GHANA

BY

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(10636710)

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DECLARATION

I, Pearl Makafuwo Ameyibor, having been a post-graduate student at the Regional Institute for Population Studies, University of Ghana, do hereby declare that, with the exception of references and literature review of existing materials on the subject of study, for which I have duly acknowledged, this work has been the sole effort of my hard work and no part of this work, either partially or fully, has been reproduced or submitted for another degree in any institution or University.

……..

PEARL MAKAFUWO AMEYIBOR
(STUDENT)

DATE …….

……

DR. (MRS.) FAUSTINA FREMPONG-AINGUAH
(SUPERVISOR)

DATE…….

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DEDICATION

To my lovely mum and daughter,

Antoinette Adjorlolo and Yolanda Enya Nuke Assisi, I love you.

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Indeed, Lord God Almighty has been faithful throughout my stay at the Regional Institute for Population Studies and I thank you Lord for a successful completion.

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ABSTRACT

It is the right of every child to get an identity and nationality. Birth registration involves documentation of a child's birth in the civil register by the government authority and it is the first legal document of a child. It provides vital information that facilitates planning and development in a country. In Ghana, about 50% of children under five are registered. In recent years, maternal education is said to be influencing birth registration. Specifically, it is proposed that maternal education is a major factor that determines birth registration. The aim of this study was to assess the extent to which maternal education influences birth registration in Ghana. This study used a sample of 4312 mothers with children under five from the 2011 Multiple Cluster Indicator Survey (MICS) Ghana dataset, which provided information on respondents' socio-demographic characteristics and a child's birth registration status. Frequency tables and graphs were used to present results generated from univariate analysis. The study used bivariate analysis to examine the association between maternal education and birth registration using chi-square test. Three binary logistic models were used to assess the influence of maternal education, place of delivery and other socio-demographic characteristics on birth registration within the study population. The results indicated 52.5% birth registration of children under five in Ghana. Compared with mothers who had no education, those who had attained Junior High School or higher levels of education were significantly more likely to have registered their children's births. All the socio-demographic characteristics were significantly related to birth registration in the study. However, the results from models ran showed ethnicity and place of residence not to be predictors of birth registration of children under five. Based on the findings of the study, recommendations are made to promote girl child education to improve birth registration.

Keywords: Birth registration, maternal education, right, identity.

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LIST OF ABBREVIATIONS

ACERWC	African Charter on the Rights and Welfare of the Child
CHPS	Community Health Planning Services
CI	Confidence Interval
CRVS	Civil Registration and Vital statistics
DHS	Demographic and Health Survey
ECOWAS	Economic Community West African States
FIFA	International Federation of Association Football
JHS	Junior High School
ID	Identification or identity
MHAI	Ministry of Home Affairs and Immigration
MICS	Multiple Indicator Cluster Survey
NLCD	National Liberation Council Decree
OR	Odds Ratio
RC	Reference Category
RIPS	Regional Institute for Population Studies
SDGs	Sustainable Development Goals
SPSS	Statistical Package for the Social Sciences
TBA	Traditional birth Attendant
UN	United Nations
UNICEF	United Nations Children's Fund
UNDP	United Nations Development Programme
UNHCR	United Nations High Commissioner for Refugees
WHO	World Health Organization

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CHAPTER ONE

INTRODUCTION TO THE STUDY

1.1 Introduction

Life is associated with events, beginning with birth and ending with death as the final exit of man. In one's lifetime, events like adoption, migration, marriage and dissolution of marriage may occur. All these incidents are recorded using the civil registration systems to generate vital information needed by governments for planning policies in national development (Mills, Abouzahr, Kim, Rassekh & Sarpong, 2017; Brolan, & Gouda, 2017).

Birth registration is a vital component of Civil Registration and Vital Statistics (CRVS). It is the continuous, permanent and universal recording of the occurrence and characteristics of births in a civil registry according to the legal requirements of a country (UNICEF, 2013; Jackson, Duff, Kusumanigrum & Stark, 2014). It is the right of every child to have an identity and a nationality. Birth registration offers every child the first legal document. The lack of birth registration excludes children from exercising their fundamental human rights such as accessing healthcare and education. It also exposes them to forms of abuse such as sexual exploitation (UNICEF, 2005, Ball, Butt & Beazley, 2017).

Birth registration produces information necessary to monitor population growth through measures such as total fertility rates and life expectancy and other important measures to determine development in a nation (Shibuya &Gilmour, 2015; Uzobo & Egharevba, 2016). As a result, data on the number of newborns is key to population planning in Ghana. It contributes to reliable administrative, statistical systems and realization of human rights. It assists in the estimation and

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calculation of infant mortality rates and fertility rates to measure the progress and problems facing the population (WHO,2013; Pais, 2009).

Efficient birth registration system is an essential factor for achieving and evaluating Sustainable Developments Goals (SDGs) (Mills et al, 2017). By 2030, the aim of SDG Target 16.9 is that countries should provide a legal identity for all. Legal identification facilitates access to social protection systems and services for all, leaving no one behind. About a third of the SDG indicators entered into Global SDG Indicator Database require data from a birth registration system (Setel, AbouZahr, Karpati & Bratschi, 2018).

United Nations emphasizes that information sourced from birth registration systems aid governments to effectively plan for the current and future needs of a country (Setel et al, 2018; Garenne, Collison & Kabudula, 2016). Therefore, if a state deems it necessary to develop, it should consider improving her birth registration systems, but unfortunately birth registration has received less attention in Ghana leading to improper planning (Fagernas & Odame, 2013).

Nearly half of the children under five in Ghana are still unregistered (UNICEF, 2013). Mothers are primary caregivers and responsible for the wellbeing of their children. Studies have shown that educated mothers take important decisions on behalf of their children (Cadwell & Cadwell, 1993). As such, higher level of education of mothers affect the roles mothers play in the lives of their children, likewise the birth registration status of a child (Frost, Forste & Haas, 2005). Therefore, this study seeks to examine the influence of maternal education on birth registration among children less than five years in Ghana.

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1.2 Background

Birth of a child is a vital event among humans. The world's population is increasing and as such, governing bodies need to make provisions to meet demands of the growing population, hence the necessity of birth registration (Jewkes &Wood, 1998). A child's birth is documented in the civil register with authority from the government, providing the legal identity, hence enabling individuals exercise their human rights (Setel et al, 2007; Todres, 2003). The process of birth registration is a necessity for a nation and its indigenes because it offers statistical administrative purposes for a country and legal benefit to an individual. The statistics aids the country keep track of its own population figures, differentials and trends whereas the legal aspects acknowledge the existence of a child, establish family ties and track major life events from birth to death (UNICEF, 2005; Isara & Atimati, 2015; Musah, Abdulai, Dawuni & Abdul-Hanan, 2015; Kirby, 2015).

Birth registration differs across the globe (Bhatia, Ferreira, Barros & Victora, 2017). The child protection unit of the United Nations Children's Fund reports 25 percent of all children under 5 years never get registered. In Sub-Saharan Africa, only 44 percent of children under 5 are registered whereas 98 percent of children under 5 are registered in Europe (UNICEF, 2013). In East Africa, in countries such as Ethiopia, and Tanzania, it is rare to possess a birth certificate. In West and Central Africa, about 63 percent of children under 5 are registered whilst Eastern and Southern Africa record the least in Africa with only about 47 percent of children under 5 registered (Bhatia et al, 2017).

In developing countries, there are obstacles that impede smooth operation of birth registration (Pais, 2009). Barriers to birth registration include distance from place of residence to nearest

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registration facilities, lack of awareness of citizens on the benefits of birth registration, inadequate funding for publicity and outreaches, lack of logistics, and limited number of skilled personnel to register births (UNICEF, 2005; Jewkes & Wood, 1998; Owusu-Agyei et al, 2012). Fees for registering a birth or obtaining a birth certificate can be excessively expensive for some people (UNICEF, 2005). These barriers can be categorized into direct costs and indirect costs. Accessibility is an example of indirect costs which affect the poor tremendously. This affects most rural folks because they are poor (Fagernas & Odame, 2013). Thus, a higher proportion of urban dwellers register their births compared to rural folks (Amo-Adjei & Annim, 2015).

Also, social and cultural factors influence birth registration, likewise the cost involved in registration (AbouZhar et al, 2015; Chereni, 2017). Traditional customs and practices might not encourage or emphasize formal birth registration processes. Customs such as naming ceremonies in African settings are sources of delayed birth registration and sometimes eventually non-registration (UNICEF, 2005). This occurs because in African settings, depending on the ethnic group, there are specific rites as part of the naming ceremony which takes some time. For example, in North Central Namibia, the grandfather of the child is supposed to name a child. If the child's grandfather is not available, the family deliberates how to handle the issue (MHAI, 2014). Another challenge in registering births in some communities in Africa is due to the superstition that when people are counted, they experience untold frequent death rates. In the traditional Akan enclaves of Ghana such as Denkyira, Fantes and Wassa, cobs of corns are used to represent people when there is an inevitable need to say the number of children in a family (Baidoo, 2012).

Furthermore, certain institutional procedures and processes do not allow children without the father's involvement or identification cards to register (Amo-Adjei & Annim, 2015). Mothers have

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to wait for their husbands before children are registered, which contributes to delays in birth registration. In cases of doubtful paternity of children, it becomes difficult to register children in countries such as Namibia because of the laid down procedures. As a result, some mothers shy away and do not register their children at all (Todres, 2003; MHAI, 2010). Also, birth registration is cost-free within the first year of birth of a child in Ghana. After a year, birth registration is referred to as late and penalties are charged, preventing the less privileged people from registering (UNICEF, 2013).

Birth registration systems have progressed in developed countries whilst in developing countries they are lagging behind. UNICEF financially and technically supported the registration of almost 30million children through programming in 75 developing countries (UNICEF, 2005). Through UNICEF's efforts to integrate birth registration into the reproductive and health service in the Gambia, birth registration increased from 64 percent to 71 percent within a year in 2008 (Muzzi, 2010; UNICEF, 2008). In Latin America, having a birth certificate improves a child's life by providing access to healthcare. Although a birth certificate does not guarantee protection, it can help protect children from exploitation and in cases involving family ties (UNICEF, 2005; Brito, Corbacho & Osorio, 2013; Kirby, 2015).

The educational process transmits knowledge. It enables mothers understand causes and remedies of socioeconomic issues including birth registration. Education helps mothers change attitudes concerning traditional beliefs and practices. As such, educated women do not take these beliefs into consideration when making decisions which affect the outcome of their children (Frost, Forte & Hass, 2005). Education offers exposure to people, giving them the opportunity to be in social

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groups, bringing about awareness to seek social services for their children like birth registration (Amo-Adjei & Annim, 2015).

Also, mothers with higher levels of formal education tend to have increased decision-making power within the family, compared to mothers with no education or low-level education (Frost et al,2005 Andrabi, Das & Khwaja, 2012). Education influences the socio-economic status of women, since most educated mothers are likely to be gainfully employed (Dake & Fuseini, 2018). It increases mother's ability to move around since they have greater control over economic resources (Mohanty & Gebremedhin, 2018). These qualities of educated mothers can help increase birth registration in Ghana.

1.3 Statement of the problem

In Ghana, about 50% of children under five are still unregistered, rendering them stateless and invisible (UNICEF, 2013; Kidane, 2014; Setel, 2007). The low levels of birth registration are due to factors such as lack of awareness and funds (Pais, 2009; UNICEF, 2005). Apart from these factors, social and structural conditions in households often hinder smooth registration of births (AbouZhar et al, 2015). Birth registration if not obtained for a child does not only deny the child legal identity and existence, but stops the child from accessing basic fundamental human rights (Todres, 2003). For instance, children lacking birth certificates are in danger of lifetime marginalization from access to education, health services and conditional cash transfer bonuses in some countries (Ball, Butt & Beazley, 2017).

In addition, they may be refused civil rights such as adoption, inheritance and may be exposed to abuse and human trafficking. Lack of birth registration renders efforts to prevent child labour

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useless. As a result, this contributes to conscription and ineligible young girls coerced into marriage without proof of age (UNICEF, 2013). Nevertheless, these dreadful possible consequences, the associations between the dearth of birth registration, benefits and defenselessness have not been meticulously studied and practiced in Africa.

Also, unavailability of up to date data offered by the birth registration system prevents local governments from effectively planning the allocation of resources for social amenities and infrastructure (Garenne et al, 2016). Ghana has incomplete data of birth registration because birth registration activities primarily are responsibilities of volunteers since there are a few skilled national personnel (Afele,2011). This results in the minimal output of birth registration in the regions of which Greater Accra Region records the highest birth registration percentage, signifying there is more work to be done (Amo-Adjei& Annim,2015). However, incomplete data causes inappropriate monitoring and evaluation systems hindering the accomplishment of the SDGs (Setel et al, 2018; Dunning 2014).

Moreover, research reveals birth registration is an advantage for children whose parents are educated, affluent and urban dwellers (Amo-Adjei & Annim, 2015). Almost 25 percent of school-aged girls stay out of school in Africa, causing girls to grow into uneducated mothers. Policymakers indicate low levels of women's education as a principal cause for the lack of improvement in the standard of living (Lambert, Perrino & Barrera, 2012). This affects uneducated mothers in exercising their authority since they often wait on their superiors.

Studies have examined the linkage between maternal education and service-seeking behavior such as healthcare (Elo, 1992; Frost et al, 2005). However, limited studies have been done in relation

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to maternal education and birth registration. Maternal education is a major influence on birth registration. When mothers are educated, they can make decisions concerning children which benefit them immediately or in the future. This includes registering the births of their children within the prescribed period. It is obligatory to register a child within 12 months after birth in Ghana. Yet, it is amazing that infant registration though cost-free, infants are the least registered with 44.53% coverage (Amo-Adjei & Annim, 2015). However, children usually spend most of their time with their mothers. As a result, there is the likelihood that an educated mother would register the child.

If mothers are not educated about the importance of birth registration and its relevance of registering within the prescribed period, it results in non-registration. This offers the opportunity to some young people to reduce their ages for recruitment purposes like joining military services (Makinde, Odimegwu & OlaOlorun, 2017). Challenges observed when looked at critically, will address registration of children, aiding collection of consistent and accurate data for nation building, since demographic variables are necessary conditions for planning (Jewkes &Wood, 1998). This study, therefore, examines the influence of maternal education on birth registration among children under five in Ghana by posing the subsequent questions.

1.4 Research questions

- What are the socio-demographic characteristics of mothers with children under five?
- What is the association between socio-demographic characteristics of respondents and birth registration of children under five?
- What is the relationship between maternal education and birth registration?

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- Does place of delivery moderate the relationship between maternal education and birth registration of children under five?
- What factors influence birth registration of children under five?

1.5 Objectives

1.5.1 General objective

To examine the relationship of maternal education on birth registration in Ghana so as to determine the extent to which mothers' education is associated with birth registration of children.

1.5.2 Specific objectives

- To examine the socio demographic characteristics of mothers with children under five.
- To examine the association between socio-demographic characteristics of respondents and birth registration of children under five.
- To assess the relationship between maternal education and birth registration of children under five.
- To determine how place of delivery moderate maternal education and birth registration of children under five.
- To investigate factors that influence birth registration of children under five.

1.6 Rationale of the study

A well-functioning birth registration system's principal purpose is to provide accurate and dependable information within a country for socio-economic development through collecting

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timely information on the total number of births occurring at a particular point in time (Ye, Wamukoya, Ezeh, Emina, & Sankoh, 2012; Garenne et al, 2016). It identifies how many children are born yearly for easy determination of birth and fertility rates which informs policies and interventions, enabling an effective response to society's needs.

Also, it aids in the preparation of population estimates, projections and construction of life tables. This allows monitoring and evaluation of social security, family planning, child health, education, and public housing. Similarly, it is employed in the direct matching technique with other registration systems to ensure completeness of data (Setel et al, 2018; Jewkes & Wood, 1998). This enables analyzing of demographic characteristics revealing the disparities and weaknesses within the population through population pyramids. This informs government and non-government organizations to deal with the changes in populations accordingly presently and in the future based on projections (Dunning, 2014).

Birth registration prevents the approximation of numbers, censuses and surveys enabling the government to adequately plan thereby avoiding misappropriating of limited funds (Jewkes & Wood, 1998). Early registration of births prevents recall problems of the date of birth of children helping gather more accurate vital information for better planning (AbourZahr et al, 2015; UNICEF, 2008). It produces quality birth registration data by reducing underreporting, age heaping and digit preferencing hence the need for education of the girl child to improve timely registration in the future (Uzobo & Egharevba, 2016). In addition, timely registration provides data for purposes of updating the voters' register in future since it is a continuous process. Also, other government identification institutions such as the Ghana immigration service uses certificates

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issued by the Births and Deaths Registry for the registration of their applicants (Boakye &Amos, 2011).

However, high levels of birth registration promote the accomplishment of the SDGs resolving into development as a result of complete data used to monitor and evaluate the goals (Setel, 2018). Birth registration provides age-sex distribution which enables specific age groups tracked in other to effectively plan for present and future needs. Thus, in a community where a clinic is intended to be set up, they consider the population involved before the project starts, to avoid exerting pressure on limited resources. The process of planning according to age-sex distribution contributes to the economy because the limited resources are managed well. Therefore, funds are channeled evenly into all areas of the country, enhancing development (AbouZhar et al, 2015).
Birth registration is of importance to children's right advocates since it assists them in lobbying for rights and privileges of vulnerable children in society such as inheritance of children whose parents die (UNICEF, 2013). It also assists in the planning of maternal and child health units in various parts of the country in the improvement of immunization and nutrition among children. This fosters quality service delivery in several sectors of government, including population health and education of the populace (WHO, 2013).

Education at any point in an individual's life is beneficial, and more importantly the education of a mother (Lambert et al, 2012). Formal education changes attitudes of women and influences their acceptance of new concepts about traditional gender roles, allowing them to achieve greater decision-making power in the household (Amo-Adjei & Annim, 2015). This increases their

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authority to move about liberally and to energetically seek services as needed resulting in high levels of birth registration (Mohanty & Gebremedhin, 2018).

Therefore, maternal education is a major indicator influencing high levels of birth registration, since educated women are economically empowered (Dake & Fuseini, 2018). Understanding the underlying details associated with maternal education and use of social services will improve awareness, increasing birth registration (Greenaway, Leon, & Baker, 2012). This study seeks to disclose how maternal education affects birth registration in order to improve the birth registration of children based on findings.

1.7 Definition of terms

Prescribed period: is the legally specified period for birth registration stipulated in Act (301). i.e. The specified period is within 21 days after birth in Act (301) and it is revised to one year (grace period).

Timely registration: is the registration done within the prescribed period.

Delayed registration: is the registration of a child after the grace period has expired.

Late registration: is the registration of a child after the legally specified period but within the grace period.

Non-registration: is the situation where a child will not be registered in his or her lifetime.

Birth certificate: is the personal certificate issued by the state to verify birth registration consisting of the parents' names, date and place of birth, and nationality.

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1.8 Organization of study

There are six chapters in this study explaining what the entire study entails. Chapter one comprises of sections that describe the importance of this study and what is intended to be achieved by the end, categorized into the introduction of the research work, the background of the study, statement of the problem, rationale, research questions, and objectives. Chapter two includes literature review, the theories, conceptual framework and hypotheses. This section identifies gaps associated with the study area, as such acclaiming solutions to fill the gaps. The third chapter defines the sources of data and how the study is carried out systematically (methodology). The fourth chapter consists of an analysis of data, descriptive statistics and examines the association between maternal education and birth registration using chi-square test, whereas the fifth chapter studies and discusses results of the factors that influence maternal education and birth registration using binary logistic regression models. Finally, chapter six gives a summary of results, provides recommendations on findings, and draws conclusions from the study.

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CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter evaluates and reflects empirical studies on birth registration in Ghana and other countries. It involves two sections. The first unit reviews existing literature and identifies gaps in birth registration, whilst the second focuses on two major theories that explain attitudes towards birth registration. From the reviewed literature, conceptual framework and hypotheses were postulated.

2.2 Patterns in birth registration

Harry Belafonte once said, "For children to count, they have to be counted". Birth registration is vital, yet an unfamiliar idea to Africans. It originated from colonial administrations when it was compulsory for expatriates to register. After independence, many countries, including Ghana, Kenya, Zambia and Uganda, improved this system to confer national identification to assist states keep record of birth rates that influence population size (Bequele, 2005).

In developing countries, birth registration system is ineffective (AbouZahr et al, 2015). This has led to processing of inaccurate figures that represent the population, making it impossible for proper planning with the limited resources available. The inefficiency of the system has resulted in other ways of collecting data such as census, surveys and surveillance, since birth registration systems in most developing countries are incomplete in content and coverage, rendering their data useless (UNICEF,2015; AbouZhar et al,2015; Owusu-Agyei et al, 2012). Birth registration is a source of collecting data for national disbursement but is not utilized in Africa. Nonetheless,

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developed countries are utilizing the system efficiently. For instance, in Europe, only 2% of newborns go unregistered (UNICEF, 2013; UNICEF, 2002; UNICEF, 1998).

Registering births holds important facts benefiting the globe and each state. As such, there are guidelines that are supposed to facilitate successful birth registration. Birth registration information must be exceptionally detailed, complete in coverage, accurate and timely (AbouZahr et al, 2015). When births are not registered, error margins in data are wide and cannot be used to make any valid deductions (Tobin, Obi & Isah, 2013). Registration of infants in Ghana is cost - free but individuals find it difficult to register. The factors that influence this may vary depending on the individual's level of knowledge, cultural settings and the circumstances surrounding the birth such as where and how a woman gives birth.

Internationally, almost 230 million children under 5 years are not registered rendering them invisible (Duff, Kusumaningrum & Stark, 2016). The UN committee on the Rights of the Child and Human Right Council has expressed the significance of birth registration standards for securing the registration of all children and urge countries to create a system that is universal, well-managed and accessible to all, and free of charge (Makinde et al, 2016; WHO, 2013; Doek, 2006; Bequele, 2005).

2.3 Legal frameworks guiding birth registration

2.3.1. Global perspectives.

Article 7.1 of the United Nations Convention on the Rights of a Child (1989) argues that birth registration is a fundamental human right, obligating a child to be registered immediately after birth (Apland et al, 2014; UNICEF, 2013; Todres, 2003; UNICEF, 2002). Interestingly, low levels

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of birth registration hinder school-age children, affecting the education of girls growing into uneducated mothers globally. It is well-known by human rights treaties such as the Universal Declaration of Human Rights that every person has the right to be legally identified. This obligates states to register all births occurring in their territories (UNICEF, 1989; Glendon, 2002; Amo–Adjei & Annim, 2015). Also, International Covenant on Civil and Political Rights and Migrant Workers Convention supports the right to be registered (Ball et al, 2017).

The Convention on the Reduction of Statelessness (1961) implements birth registration to safeguard children from being stateless (Weip, 1962; Weissbrodt &Collins, 2006). The United Nations High Commissioner for Refugees (UNHCR), the UN Refugees agency, also launches campaigns to end statelessness within 10 years from 2014 to 2024. The agency proposed 10 actions in UNHCR's Global Action Plan Practices to assist states, with the support of other stakeholders to accomplish its targets. Birth registration is the 7th action encouraging States to 'ensure birth registration to prevent statelessness' (Seet, 2016; Zou, 2016). However, the aim of ensuring no child is stateless is closely linked to other actions in the Global Action Plan in which education plays a role in empowering women to be involved in birth registration.

2.3.2 African perspectives

In the pursuit to prevent statelessness, the UNHCR launched a campaign, 'I belong.' Birth registration system was indicated as a major factor to achieve their goals. Their aim was to achieve legal identity using birth registration (retrieved from www.unhcr.org). The African Board on the Rights and Welfare of Children, responsible for the monitoring and execution of international law on nationality, sensitizes African Ministers in charge of Civil Registration, on Article 6 of the

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African Children's Charter, which states the right to a name and registration in order to acquire nationality immediately after birth (Kidane, 2014).

The African Charter on the Rights and Welfare of the Child (ACERWC) held a conference for ECOWAS members in Cote d'Ivoire to make sure their constitutional legislation recognizes the principles of conferring a child the nationality of the State in which the child is born, if at the time of the child's birth he is not granted nationality by any other State in conformity with its laws (Lloyd, 2016). Also, the African Union, African development bank and UN Economic Commission for Africa teamed up with other international organization on the initiative to improve birth registration in Africa (retrieved from www.citizenshiprightsafrica.org)

Nevertheless, a recent study conducted by the Committee of Experts of the African Commission on Human and Peoples' Right reveals only a few African countries have incorporated this in their national constitutions and laws. For example, The Gambia expressly provide right to nationality either for "everyone" or for all children in their constitution, whereas countries such as Cape Verde is yet to do so (Manby, 2016).

2.3.3 Ghanaian perspectives

Ghana was the first state in Sub-Saharan Africa to endorse the UN Convention on the Rights of the Child in February 1990. Since then, Ghana continues to follow its guidelines (Imoh, 2012). However, the Births and Deaths Registry in Ghana was founded by Act 301 of 1965, within the Ministry of Local Government and Rural Development, to provide accurate, reliable and timely data of all births and deaths taking place in Ghana (Fagernas & Odame, 2013). It was amended in

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1968 by the National Liberation Council Decree (NLCD, 285) and further amended by the Local Government Act, 1993 (Act 462). It began in 1888 in Gold Coast as a Cemeteries Ordinance and was accountable for registration of deaths of the colonial masters. It was modified in 1819 and converted into the Births, Deaths and Burials Ordinance in 1912 and has experienced tremendous changes from the time it was set up (Dake & Fuseini, 2018; Peters & Mawson, 2015).

Section 8 of Act (301) stipulates "birth of every child in any district to which this Act applies must be registered by the Registrar in the district in which the child was born." Nonetheless, birth is surrounded by unforeseen circumstances such as doubtful paternity, incapacitated parents and deserted newborns, therefore, provisions are made in the Act (301) to cater for such situations. By the Act, birth must be registered within twenty-one days after date of birth; outside this period, payment of the prescribed fee is made (Act 301,1965). However, the period has been extended to one year to enable everyone register (Fagernas & Odame, 2013).

2.4 Sub-regions(countries) and birth registration

Birth registration differs around the world depending on the laid down procedures in each country (Bequele, 2005). It facilitates full participation in the social order of children. In Peru, children's access to medical care requires one parent possessing a birth certificate. A caregiver who cannot produce his child's birth certificate in Columbia, cannot enroll his child in school (Mackenzie, 2009). A child who successfully completes the eighth grade in Dominican Republic and does not have a birth certificate cannot enroll in high school. In each case, a child's welfare is negotiated for lack of a birth certificate. This provides a concise insight into the problem's Latin American children and their parents encounter when a child lacks birth certificate (Dunning, 2014; Brito et al, 2013).

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There are disparities in birth registration system in Asia. Registration in Indonesia is complicated because of bureaucratic confusions where registering of births is intricated by overlying jurisdictions of civic bodies and government (Todres, 2003; Mohanty & Gebremedhin, 2018). It is not seen as a priority by a group of people in Indonesia to register their births, indicating education as an essential tool in enhancing birth registration (Ball et al, 2017). The one-child policy once practiced in China, may prevent people who accidentally have more children from registering, making some children invisible (Duff et al, 2016; Li, Zhang & Feldman, 2010). Also, in China, birth registration guidelines state a child should be registered within 30 days of which the parents must do so in the village of the mother's official residence, a challenge for families who migrate for work (Pais, 2009). However, Uzbekistan and Vietnam have almost 100 percent birth registration coverage on the same continent because in Uzbekistan, the state pays a bonus to parents for registering their children, whilst in Vietnam, birth registration systems are incorporated into their healthcare system (Apland et al, 2014; Pais, 2009). Also, empowering women have increased birth registration among children in India (Mohanty & Gebremedhin, 2018).

Meanwhile, in sub-Saharan Africa, 66 percent of children under age five go unregistered because birth certificates are not used as a requirement for service seeking in most countries (Jeweks, 1998; UNICEF, 2002). Birth registration has seen tremendous patronage on the African continent from 2000, due to sensitization of countries by UNICEF (Fagernas & Odame, 2013). For this reason, Burundi and Madagascar have improved their rate of birth registration extremely, though among the poorest countries in Africa (UNICEF, 2002). Zimbabwe's birth registration proportion increased due to conditional cash transfer systems in relation to the birth registration systems.

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However, some countries like Eritrea have no record of birth registration (Mohanty& Gebremedhin, 2018; Todres, 2003).

2.5 Modes of birth registration

Birth is an event and must be documented early to track demographic trends thereby minimizing error in data collected (Isara & Atimati, 2015). Untimely birth registration is a challenge facing Ghana (Fagernas & Odame, 2013; Owusu-Agyei, 2012). Other developing countries record 98 percent coverage because a child is temporarily counted immediately after birth where a yellow coupon is issued by the medical professional which is sent to the registry for an official document later, confirming registration, for example, in Vietnam and Kenya (Apland et al, 2014). Challenges result if people misplace the yellow coupon, hence do not go and register at the registry, yet have been counted. In case a child is not born in the hospital, a witness, an elder or a village chief accompanies a family member or writes a letter to the registry for a child to be registered (UNICEF, 2013).

Sometimes, the type of documents issued to citizens are misunderstood (Makinde et al, 2016). In Ghana, infants are given the pink certificate with their names written on it which is the original. The certified copies are later requested by the individual that goes with a fee. This has prevented a lot of people from registering early and receiving the pink certificate, because it's normally rejected when presented as birth certificates. Therefore, people rather wait and do the certified copy, resulting in delayed registration, contributing to erroneous data (Fagernas & Odame, 2013; Owusu-Agyei, 2012).

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Globally, many countries have stipulated time periods in their constitution for birth to be registered (Makannah, 1981). When births are registered within the required time frame expected, it is known as timely birth registration (Retrieved from www.africanchildforum.org). Therefore, untimely registration can be categorized into late registration and delayed registration (Isara & Atimati, 2015).

Birth registration is either mandatory or optional in countries, but UNHCR mandate is to prevent statelessness, therefore, it admonishes all countries to make it obligatory and enact laws to support it (Heap & Cody, 2008). In some countries, birth registration is cost-free whereas in other countries, for example South Africa, it is compulsory to pay. In countries where registrations are cost-free, it is within a time frame, after which applicants are made to pay a penalty if they do not meet the deadline for registration, for example, in Ghana and Kenya (Apland et al, 2014).

2.6 Reviewing existing literature

Reviewing literature of existing studies assists in better understanding of the concept on birth registration. UNICEF and other researchers have published papers on birth registration in the world as well as on country basis, comparing within countries based on different factors using data from Multiple Indicator Cluster Survey (MICS), Demographic and Health Survey (DHS), and other sources. For example, Bhatia et al, (2017) published a paper comparing 94 countries with the help of MICS and DHS of these countries. Studies have been conducted on the socio-economic or socio-demographic factors of birth registration, but few studies have researched into details considering each factor that affect birth registration in order to confirm the extent of importance of each factor and adopt strategies to assist registration of birth.

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In Ghana, there is insufficient literature on birth registration. However, Fagernas & Odame (2013) conducted a study on *Birth registration and access to health care: an assessment of Ghana's campaign success*, in which they spelt out the successes of Ghana and the strategies adopted. Also, Amo- Adjei & Annim's 2015 study, *Socio-economic determinants of birth registration in Ghana*, whereas Dake & Fuseni (2018) examined levels and differentials in registration and certification of births in Ghana, but my study seeks to find the relationship between maternal education and birth registration, as indicated in literature as one of the major influences on birth registration, and to contribute to the growing literature on birth registration.

2.7 Determinants of birth registration

The determinants of birth registration are closely connected to the barriers of birth registration, yet there are differences. Inabilities for children to be registered depends on parent's status in areas such as their educational attainment, marital status and wealth (Bhatia et al, 2017; Amo-Adjei& Annim, 2015). These are social stratifications that contribute to registering birth of a child. Being educated gives one the opportunity to register the birth of a child due to awareness of birth registration. Marital status influences birth registration in cases where one partner knows about birth registration or can afford the cost involved in birth registration, increasing the chances of a child being registered.

Cultural, institutional, political and legislative conditions could all be a source of motivation for registration. It behooves on governments to ensure all citizens register their births (Peters & Mawson, 2015). Ethics are sets of moral standards that regulate the work of employees (Banks, 2012). If employees exclude these guidelines, it develops into problems that hinder the smooth

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operation of systems. Nonetheless, the only way to avoid future illegitimate political and administrative rights issues is to safeguard the birth registration system (Todres, 2003; UNICEF, 2002). If chief executive registrars ensure guidelines are followed by subordinates through proper supervision and monitoring methods, it disallows illegal registering of individuals, for example migrants (Ball et al, 2017).

The one-year grace period of free registration is not taken advantage of because of lack of awareness of citizens (Fagernäs & Odame, 2013; UNICEF,2013). Registration after a year attracts penalties preventing children from poor households to be registered (Dake & Fuseini,2018; Amo-Adjei & Annim 2015).

Studies indicate that educational attainment of children is affected when the child is without birth certificate (Corbacho et al, 2012). Others claim the ability of a child to be registered depends on the educational attainment of the parents (Amo-Adjei & Annim, 2015). They argue that when a parent is educated, they would know its importance hence would not hesitate to register their children (Dunning, 2014). However, others claim when a grandmother registers the mother of a child, the likelihood of her also registering her children is high, indicating the influence of a mother on a child (UNICEF, 2013).

Factors affecting the likelihood of registering children are numerous and differ in countries, depending on the importance associated with birth registration (Bequele, 2005). Legal rights associated with having a birth certificate influences most parents to register the birth of their children. These legal manifestations are in response to protection of children's right, benefit

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entitlements and inheritance acquisition of children when their parents die. For instance, in Lao PDR, parents register the birth of their children as a result of article 9 of the family registration law (Nomura et al, 2018). In some countries, it is used for accessing healthcare, hence parents are forced to register their births. Also, children are likely to be registered because with birth certification, a child is able to enroll in public funded schools (WHO, 2013).

Moreover, strategies and efforts of stakeholders resulted in interventions such as mobile registration, which has increased the likelihood of parents registering their children. This has bridged the accessibility gap and made some mothers aware of birth registration (Fagernas & Odame, 2013). Accessibility as a barrier of birth registration has so many dimensions which may be due to awareness level of parents, distance to and knowledge of registration centers, and the cost involved in getting to the registration centers play a role in determining the likelihood of registering the birth of a child.

Furthermore, according to Nomura et al. (2018), ethnicity influences the likelihood of registering births because some ethnic groups are likely to live in mountainous areas. Also, some are nomadic, affecting where they settle. These nomads are predominantly herdsmen who are in constant search for pastures for their cattle hence live very far from social communities with social amenities and services. The displacement of these nomads decreases their likelihood to register their children (Nomura et al, 2018). Place of delivery has also been specified in studies to increase the likelihood of children being registered for various reasons, one of which is the awareness of health personnel who are trained to register births (Adi et al, 2015; Fagernas & Odame, 2013; Pais, 2009). Besides,

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among indigenous women, home delivery is preferred as a result of their traditional practices such as staying by the fire during perinatal period (Nomura et al, 2018).

2.8 Maternal education outcomes

Several studies highlighted maternal education as a major factor for increased percentage of birth registration (Dake & Fuseini, 2018; Amo-Adjei & Annim, 2015; Isara & Atimati, 2015; Tobin et al, 2013). Mother's education remains the main underlying factor for improvement of infant mortality and malnutrition, yet there is no single study that specifically confirms maternal education as a factor for influencing birth registration (Frost et al, 2005).

Differences in maternal education affects the livelihoods of their children in several areas like education and health. Parents' level of education is closely related to their children's educational outcomes (Davis-Kean, 2005; Andrabi et al, 2012). Educated mothers are likely to be gainfully employed hence have higher household incomes. This confirms the linkage between maternal education and service-seeking behaviors due to the purchasing power of educated women (Dake & Fuseini, 2018; Elo, 1992; Frost et al, 2005; Mohanty & Gebremedhin, 2018).

Findings from literature specifying that maternal education enhances the odds of children being registered is not surprising, as it is consistent with normative indication (Makinde et al, 2016). Also, studies in Costa Rica contribute to comparative issues on birth registration and maternal education (Pais, 2009). Mothers with some form of educational qualification are more likely to register their children than mothers with no education (UNICEF, 2013; Amo-Adjei &, 2015).

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Mothers being primary caregivers spend much time with the children compared to the fathers, as a result, their influence on the children is substantial (Frost et al, 2005).

2.9 Age and birth registration

In Ghana, people register birth but do it late especially when they need it for an urgent course which could be for admission to an institution or for recruitment purposes (Fagernas & Odame, 2013). The probability of registering birth, associated with the child's age is non-linear. From research, the pattern of birth registration established according to age of a child increases from age 2 to 5 (Dake & Fuseini, 2018; Amo-Adjei & Annim, 2015). It explains that children have attained school-age and require to be registered in order to receive the legal document for enrollment. However, other countries like Togo and Malaysia also face the same challenges (Amo-Adjei & Annim, 2015).

Also, age of mother contributes to a child being registered timely. Mothers within the age group 30-39 are more likely to register the births of their children compared to the other age groups (Makinde et al, 2016; Frah, 2015). The causal effect may be mothers of such age groups may have more children, enhancing their awareness on birth registration. However, teenage parents are not allowed to register their children in Vietnam in conformity with the laws (Apland et al,2015).

A national survey in 2013 illustrates variation of 31 percent completeness of birth registration of under 5 children across states in Nigeria. Makinde et al. (2017) have stated categorically that untimely birth registration causes age fraud prevalent in Nigerian football. Footballers, like every other person, claim that their births were not officially registered thus have no birth certificate to

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prove their age which causes identification falsification (Ball et al,2017). This has led to about 26 players being disqualified from the under-17 national team and FIFA (Makinde, Odimegwu & Olaolorun, 2017).

2.10 Place of residence and birth registration

Residing in an urban or rural area affects birth registration (Bhatia et al,2017; Makinde, Olapeju, Ogbuoji & Babalola, 2016). It is certain that people in villages are disadvantaged with regards to social amenities and infrastructure, hence birth registration will also be a challenge to them. Accessibility to the offices to register births for their infants is difficult because of the distance that involves cost most of the time (Nomura et al, 2018). This prevents most of the rural folks from registering.

Residents in urban areas are likely to register, since most of them are educated and able to easily access services (Dake & Fuseini, 2018). Studies indicate that residents of urban areas seek services, hence most of the women deliver at health facilities (Adi et al, 2015; Jackson et al, 2014). At the health facilities, awareness is made about birth registration, making most of the women register their children (Fargernas & Odame, 2013).

However, Plan International and UNICEF assist rural folks in registering births through mobile registration outreaches organized in collaboration with Births and Deaths Registry in Ghana. (Dake & Fuseini, 2018; Fagernas & Odame, 2013).

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2.11 Marital status and birth registration

According to the DHS (2006) in Namibia, only 25 percent of children grow up with both parents (MHAI, 2010). This explains why most children are not registered immediately after birth, due to the misconception that a mother cannot register a child (Todres, 2003). Marital status influences birth registration, since there is evidence that the heads of these families make major decisions in African settings (Isara & Atimati, 2015; Tobin et al, 2013).

In Ghana, provision is made for doubtful paternity or unknown father, but many people hesitate to register such children. In some cultural settings, it is allowed for the child to bear their mother's surname, though emotionally painful to them, so that the child can have a name and register. In cases where both parents lost their lives after the birth of a child, it makes it difficult for that child to be registered since they are left to be catered for by their relatives who most often may not accurately remember their birth dates (Chereni, 2017; Corbacho & Rivas, 2012; MHAI, 2010).

2.12 Wealth and birth registration

Severe poverty can render parents unable to register their newborns, which may be due to unemployment. This makes parents abandon children on the streets with no documents. However, some parents may have addiction problems (alcoholics), therefore cannot even remember their children due to their condition. These factors are classified as social barriers to birth registration (MHAI, 2010; Bhatia et al, 2017).

Birth registration involves monetary commitment, therefore most individuals with lower income are not able to register (Dake & Fuseini, 2018; Adi et al, 2015). Most countries have legal time frames for registration that is cost-free but citizens do not take advantage of it because of barriers

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such as accessibility, which may involve cost. People end up paying a penalty, which they mistake as a fee for the service (UNICEF, 2013; Makannah, 1981).

2.13 Cultural practices and birth registration

The cultural setting of a person influences their perceptions on issues (Corbacho & Rivas, 2012). In Ghana, a child is named at a ceremony, hence a child cannot be registered immediately after birth. These days, it takes more than a month for a naming ceremony to be organized, since relatives and friends will have to be invited from far and near (Agyekum, 2006).

In north-central Namibia, the grandfather of the child is supposed to name a child, thus one has to wait for him to arrive as customs demand. Also, the epitith tradition obligates the mother and the child to stay indoors for 5-30 days until a family member from the father's side has arrived. The child's piece of hair is cut and presented to the world for the "first time". In the case where there is no father, the family has to gather and discuss how to handle the situation, which can be a long process and by then, the legal time limit for registration may have passed. (MHAI, 2010; UNICEF, 2005).

In some traditional communities, indigenous rituals obligate women to deliver in the house, preventing them from accessing health facilities (Crobacho & Rivas, 2012). Indigenous tribes do not communicate with the predominant language which may be a barrier to birth registration. For example, in Indonesian the local indigenes speak sasak, whilst the civil registry conducts birth registration in Indonesian (Ball et all, 2017; Crobacho & Rivas, 2012).

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2.14 Religion and birth registration

The beliefs and norms of religious groups influence birth registration. This may be gender discrimination against women in some religions which hinder them from registering the birth of their children. (UNICEF, 2005: Todres, 2003). Literature reveals that it is difficult for families with heads that practice the traditional religion in Ghana, to register their births (Amo-Adjei & Annim, 2015). However, in north-east region of Nigeria, mainly Muslims with Hausa and Fulani cultures reside in remote areas, attributing to only 19 percent of birth registration coverage (Adi et al, 2015).

Also, some women prefer to give birth at churches because of their beliefs, preventing them from registering births (Adi et al, 2015). In India, children born in Muslim families have better odds of registering compared to children born in Hindu families (Mohanty & Gebremedhin, 2018). These differences are established because of varying religious backgrounds in countries.

2.15 Place of delivery and birth registration

Place of delivery exposes mothers to the information about registering the birth of their children after delivery, since medical professionals are believed to be aware of the process (Pais, 2009). In some health facilities, the births and deaths offices are situated on the premises, making it easier to register a child's birth (Adi et al, 2015; Fagernas & Odame, 2013; Jackson et al, 2014; Prickette & Augustine, 2017).

This idea is confirmed in some West African states like the Senegal, Cote d'Ivoire and Cameroon. For instance, in Senegal, 25% of children registered were delivered by medical professionals

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compared to 14% of children not registered, who were delivered by non-skilled personnel (UNICEF, 2002). However, Isara and Atimati (2015) have indicated that children born at health facilities are registered more, compared to children delivered in the home, as practiced in some communities due to tradition.

2.16 Importance of birth registration

A child without a birth certificate may not get recognition of existence and may not have chances of acquiring education and a job, thus forcing him to earn a living through illegal means such as cyber-crime (Dunning et al, 2014; UNICEF, 2002). Such a person is viewed with suspicion because he does not have anything to prove his identity. In most developed countries like Canada, without a birth certificate, it is difficult to possess a health card. Yet, this health card is used for vaccination purposes and access to healthcare (UNICEF, 2013; Prickette &Augustine, 2017).

First order birth registration data must be worthwhile and part of an operative, complete and consistent civil registration system (WHO, 2010; Owusu-Agyei, 2012). Although birth registration data increases the ability of the government to perform a number of governance functions, it does not have any direct impact on democratic function in a state. The functions played using birth registration data makes governments accountable and committed to providing services. It also opens the door to other forms of government-issued identification, such as a passport in Ghana (Boakye &Amos, 2011).

Development planning is a major advantage of birth registration. Data collected are analyzed, assisting government and benefactor organizations in policy formulation and defining development priorities (Garenne et al, 2016; AbourZhar et al, 2015). Population data regarding

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gender, age and distribution of population aids planning prior to provision of services such as healthcare (WHO, 2013; Mackenzie, 2009; Rivas, 2013). It empowers planners to envisage population patterns correctly, permitting distribution of resources and service delivery in the future appropriately. Scrutinizing population data according to demographic characteristics discloses inequalities and weaknesses, aiding governments to direct resources to where they are most needed (UNICEF, 2013; Dunning, 2014).

Vitals from birth registration is the finest form of demographic tools for assessing population health (WHO, 2013). Child rights advocates argue that birth registration data assists campaign for children's rights as well as better-quality service delivery to children. Birth registration figures are required to articulate plans concerning maternal and child health such as nutrition, immunization and education (Frost et al, 2005; Corbacho et al, 2013; Rivas, 2013).

Birth registration is a system of a country that keeps permanent record of existence (Pais, 2009; Musah et al, 2015). During disasters and disease outbreaks, individuals escape from their countries to save their lives. This causes displacement of people especially children. If children are registered, it becomes easy to track their families when disaster subsides (UNICEF, 2005). Also, refugees return to their home countries when wars subside to prevent statelessness, which is verified by the birth registration system (Ball et al, 2014; Jewkes &Wood, 1998).

UNICEF published a handbook on *A Passport to Protection*, elaborating the importance of birth registration in the protection of children and establishing the link between non- registration and abuse (UNICEF, 2013). Children are vulnerable in society; hence measures are put in place to

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guard against exploitation and abuse (UNICEF, 2015; Ball et al, 2017, UNICEF, 2002). Children without birth certificates are susceptible to perils such as illegal adoption, sexual abuse, child marriage, unprotection of the juvenile justice system and inability to access grants and scholarships (UNICEF, 2013; Ball et al, 2017; Ball et al, 2014).

Birth registration is essential for correctly estimating birth rates and accessing the level of infant mortality (Mikkelsen et al, 2015; Ye et al, 2012; AbouZahr et al, 2015). Accurate information on births would be important for tracking the progress towards the Sustainable Development Goals such as promoting continual, complete and sustainable economic growth, constructive employment for all, fostering inclusiveness (Setel, 2018; Mills et al, 2017).

2.17 United nations approach

The United Nations advocates for efficient birth registration systems because of the value of its importance and the need for its improvement in developing countries. Initiatives of the UN such as UNHCR and UNDP are also supportive, but UNICEF remains the main promoter of birth registration in Africa. In the year 2000, birth registration on the continent was appalling, but has improved tremendously through its efforts (Todres, 2003; Fargernas & Odame, 2013).

To achieve a successful universal birth registration system, UNICEF adopted three key areas; education, law and local factors. Government officials were persuaded to recognize the importance, the political will to reinforce birth registration. Publications of information are being carried out using vans, posters and media to educate the populace. Certain laws are being removed and new ones are being enacted to enable easy birth registration (Todres, 2003). The local factors

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include cultural barriers and the cost of local folks moving from remote areas to registration centers, as a result, the idea of mobile registration is practiced in sub-Saharan Africa (Dake & Fuseini, 2018; UNICEF, 2005; Dow, 1998).

Dealing with these factors increased the success rates of birth registration in Africa (Fagernas & Odame, 2013). Due to the campaigns of UNICEF and Plan International, birth registration increased from 44% to 71% between 2003 and 2008 among children under 5 years according to DHS data in Ghana (Fagernas & Odame, 2013).

2.18 Theoretical perspectives

This study seeks to use two theories to establish the relationship between maternal education and birth registration. They are the rational choice theory and Social behavior model. These theories play roles in decision making on issues pertaining to life and how to approach them.

Rational choice theory was instigated in the late century with the work of Cesare Beccaria since then it was adopted in studies of economics and law (Muth, 1961; Merton, 1973; Ellickson, 1989). It is explained as a man possesses the reasoning faculties to make decisions weighing the benefits and cost as well as the means and ends based on three actors. The actors include interest, consequence and alternatives. First, an individual may have interest in registering birth, considers the consequence of registering the birth and makes a choice whether to register or not (Ewbank, 1994; Green & Fox, 2007).

Corbacho & Rivas (2012) consider parent's rationality as a determinant of birth registration. They reported that parents compare the means and ends when deciding to register a child's birth and

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state that rational parents aware of the benefits of birth registration, would bear the cost of registration when costs are lower than the worth of the supposed benefits. However, once everything is held constant, differences in the assessment of benefits and costs would yield different registration rates among households.

Social behavior model was formed from Anderson and Newman's framework of health services utilization (1973) categorized into three factors that influence a person's behavior. These categories are the predisposing, the enabling, and need factors, of which the predisposing factors concept was adopted in the study (Anderson, 1995; Anderson & Newman, 1973). It includes demographic factors and social structure characteristics such as ethnicity, marital status and education. It indicates that personal characteristics of individuals such as experiences, make them more inclined to access services (Wacker, Roberto & Piper, 2007). Thus, an educated woman might have used a birth certificate in her schooling process, therefore, will deem it necessary to register her child, as a result of her level of awareness. Also, a woman may become aware of the birth registration system because she delivers at a health facility (Adi et 2015; Brito et al, 2012).

Finally, if a woman has the interest in registering the birth of her child, she considers the consequences of registering the birth timely if only she understands the alternatives before her and makes a choice from it (Green & Fox, 2007). This is the process of rationality (Quackenbush, 2004). However, this process is influenced by personal characteristics of the woman such as education, age and marital status. These characteristics would lead her to arrive at a decision based on her beliefs, personal resources and many others (Anderson, 1995). This study seeks to find the influence of maternal education on birth registration. Therefore, a mother's predisposition to

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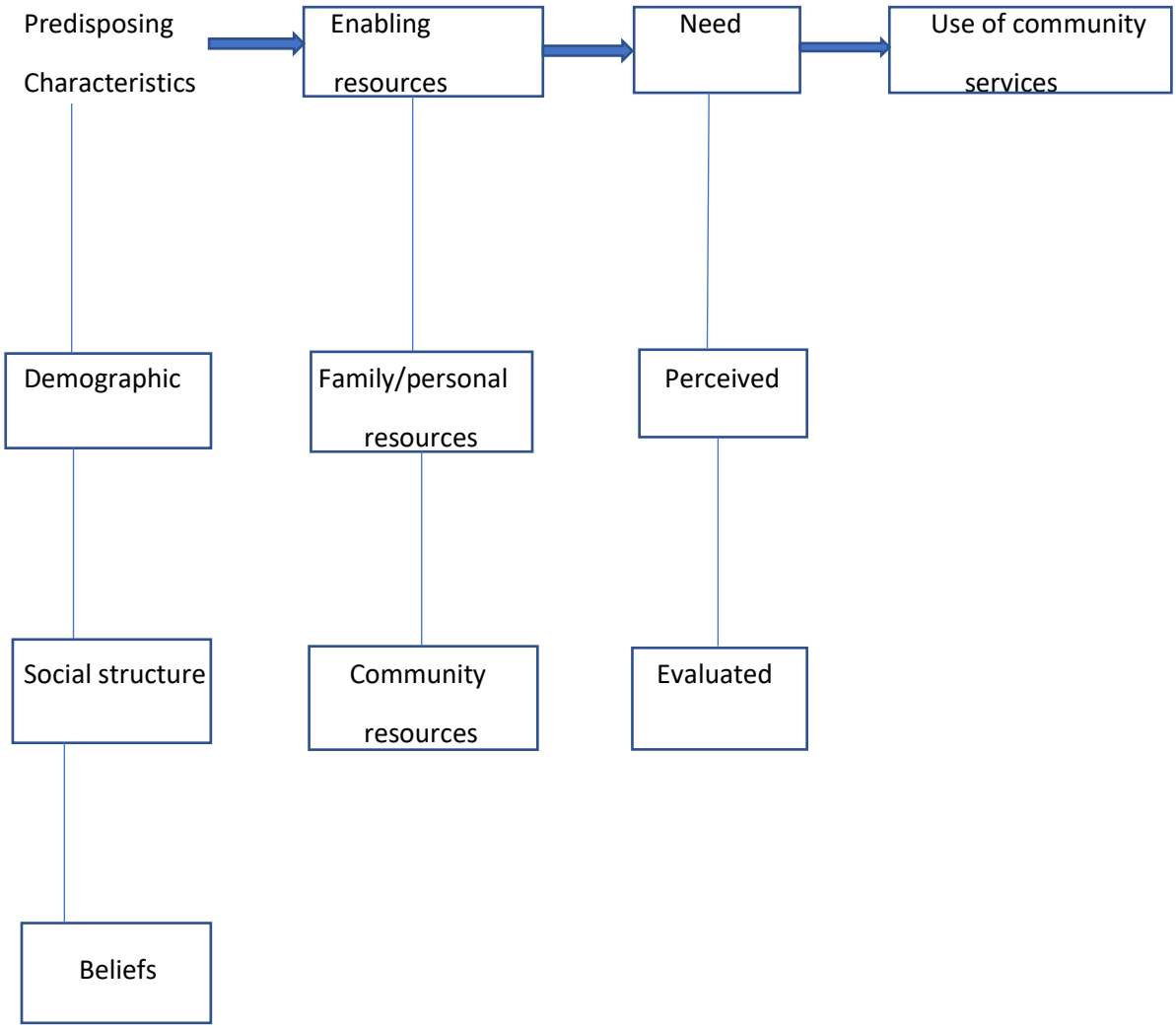
education may influence them to register the birth of their children because increased level of knowledge enhances ability to understand concepts facilitating birth registration. The core ideas of rational choice theory and social behavior model informed the construction of the conceptual framework for this study.

Figure 2.1 A framework showing the Social behavior model



Source: Adapted from R. Anderson (1995). American Sociological Association.

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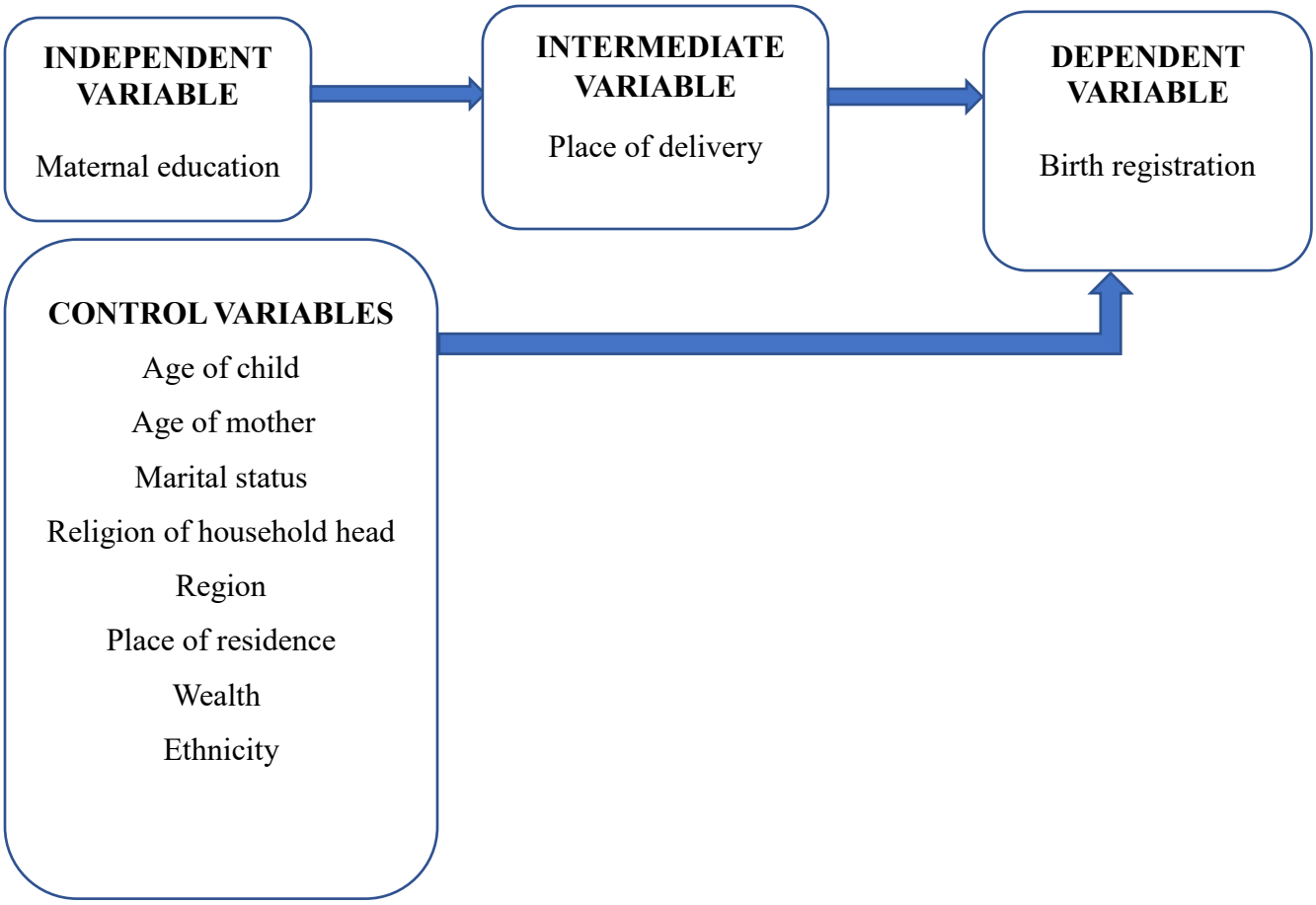
2.19 Conceptual framework

The conceptual framework is formed from reviewing literature obtained on the theme of study. It represents the relationships between maternal education and birth registration including other variables that influence maternal education aiding birth registration. Figure 2.2 seeks to establish the connections among the various variables that affect birth registration in Ghana.

Figure 2.2 Conceptual Framework showing the relationship between maternal education and birth registration



Source: Author's construct, 2018

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2.20 Hypotheses

From related literature and theories informing the conceptual framework, the following hypotheses were developed:

- Educated mothers are more likely to register the birth of their children than uneducated mothers.

- Infants are less likely to be registered than children between 12 months and 59 months.

- Children born in urban areas are more likely to be registered than children born in the rural areas.

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CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter discusses the data source, variables and methods used in the study. It provides information on how data was collected, selection of samples, variables employed and the procedures used in analyzing the data. It also explains the dependent variables and explanatory variable and how they are measured. In addition, limitation of the data used was stated.

3.2 Source of data

This study draws on data from the Ghana Multiple Indicator Cluster Survey (MICS) of 2011. It meets international standards and provides the ability to compare with other similar MICS data. MICS is a nationally representative household study carried out by UNICEF involving developing countries to collect and analyze data to fill gaps in data for evaluating status quo of women, men and children internationally. Also, it provides a vital and consistent form of information concerning households in Ghana. UNICEF in collaboration with the Ghana Statistical Service, Ghana Health Service and other stakeholders conducted this survey.

The primary instruments used to collect data from the field consists of household, children, women's and men's questionnaires. This study uses the information solely from women's and children's questionnaires which provided required data on mothers and their children's background characteristics. The survey collected information on birth registration, breastfeeding, immunization, malaria, anthropometry, care of illness, anemia, childhood development, infant and

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child mortality among children under five years, as well as data on contraception and unmet needs in women.

3.3 Sample design and sample size

The sample for the Ghana Multiple Indicator Cluster Survey (MICS) was planned to provide approximations for a large number of indicators on the state of women and children at the national level, for urban and rural areas, and for 10 regions: Ashanti, Brong Ahafo, Eastern, Central, Greater Accra, Northern, Volta, Upper East, Upper West, Western regions. The rural and urban areas within each region were identified as the main sampling strata and the sample was selected in two stages. Within each stratum, a definite number of census enumeration areas were selected systematically with probability proportional to size. Since the sampling frame, the 2010 Ghana Population and Housing Census, was complete, a new listing of households was not carried out in all the sample enumeration areas prior to a systematic sample selection of 15 households in each selected cluster. The sample was stratified by region, rural and urban areas, and is not self-weighting since Upper East, Upper West, Northern and Central regions were over-sampled. For reporting national-level results, sample weights are used (MICS Ghana report, 2011).

The survey sampled 12,150 households nationwide but found out that 11,970 of them were actually inhabited. Out of this number, 11,925 were successfully interviewed representing a response rate of close to 100 percent. A total of 7,626 children aged five years and below were itemized in the household survey questionnaire. Of this list, questionnaires completed was for 7550 children. The sampled size of this study was arrived at by making sure all the background characteristics of the mother or caregiver correlates with the child. This qualifies the child to be analyzed. The data was

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cleaned to obtain 4312 children with their respective mothers, since the study focuses on maternal education and birth registration of children under five in Ghana. The number of children decreased to this number because some of the children's place of delivery was not taken.

Weight was applied to the data set to cater for the under and over sampling in some regions. The weight provided by the MICS data was used to weight the sampled data under study in order to aid in analyses and results representative of the target population in the entire country.

3.4 Definition of variables

Three core types of variables exist. They are the dependent variable, independent variable and control variables. Others include intervening and moderating variables. The variables employed in this study are explained in order to draw meaningful deductions. The socio-demographic variables selected influence birth registration according to the questions asked in the children file and women file respectively.

3.5 Dependent variable

Birth registration is the dependent variable under consideration. This study aims at probing the relationship between maternal education and birth registration. From the extant literature, birth registration has been influenced by a lot of factors, but maternal education is suggested to be a salient factor that contributes to increased birth registration (Makinde et al, 2016). Timely registration of births is very essential because it enables consistent counting for calculating or estimating birth rates. Delayed registration does not really serve the purpose of registration but only recognizes the child as a citizen. In the children's file of the survey, five questions were asked

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in relation to birth registration of which BR2 asks 'Does name have a birth certificate? May I see it?' And the responses were 'yes, seen', 'yes, not seen', 'No' and 'Don't know'.

For the purpose of this study, in accordance with the classification in the MICS questionnaires, 'yes, seen' and 'yes, not seen' were classified as 'yes' and coded as 1. 'No' and 'Don't know' was lumped together as 'No' and coded as 0. Thus, 'Yes', denotes a child has been registered whereas 'No' denotes a child has not been registered in the Births and Deaths registry.

3.6 Intermediate variables

Place of delivery is the intermediate variable considered in this study. The variable was used because other studies employed the variable indicating it to have influence on birth registration (Dake & Fuseini, 2018; Amo-Adjei & Annim, 2015; Isara & Atimati, 2015). In Ghana, some of the major hospitals have birth registration offices on their premises. This enables women who deliver in these facilitates to register since they are informed at birth about the registration of their children (Fagernäs & Odame, 2013). The study measures place of delivery of children based on the question asked the respondent – 'where child was delivered'. The respondents' answers were categorized as; Respondent home, other home, government hospital/polyclinic, government clinic, government health post/Community Health Planning Service (CHPS), other public hospital, private hospital, private clinic, private maternity home, other private medical facilities and others. However, these categories were recoded into three categories. The home and other home were recoded as 'home'**.** Government hospital/polyclinic, government clinic, government health post/CHPS, other public hospital was recoded as 'public health facility', whereas private hospital, private clinic, private maternity home, other private medical facilities and others were coded as 'private health facility'.

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3.7 Independent variables

The independent variable of interest in this study is maternal education. Prior to presenting the model specifications, a detailed examination of the literature hypothesizing the positive influence of maternal education on the success of child survival, health and well-being was done (Frost et al.,2005). Maternal education has been confirmed in literature as a factor that predisposes children to birth registration (Isara & Atimati, 2015). Mother's education was measured as 'No education', 'Primary', Middle/JHS', 'Senior high school/ higher'.

3.8 Control variables

The control variables comprised of maternal and child characteristics. These were age of child, age of mother, marital status, religion, region, residence, wealth and ethnicity.

Table 3.1 Measurement of control variables

Variables	Description
Age of child	Measured in months but classified into 5 categories; 0-11,12-23,24-35,36-47,48-59
Age of mother	Measured in years but classified into 7 categories;15-19,20-24,25-29,30-34,35-39,40-44,45-49
Marital status	Marital status of respondent categorized into three groups; Currently married/in union, formerly married/in union and never married.
Wealth status	Measured by 5 categories (Poorest, Poor, middle, rich, richest) but classified into 3 groups; Poor, Middle and Rich
Religion of household head	Measured by 12 categories but classified into 4 groups; Christianity, Islam, Traditional/spiritual and Others.

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Ethnicity of household head	Measured by 10 categories but coded into 5 groups; Akan, Ga/Dangme, Ewe, Mole Dagbani and Others.
Place of residence	Classified as Urban and Rural
Region	Classified into 10 categories; Greater Accra, Central, Western, Volta, Eastern, Ashanti, Brong Ahafo, Northern, Upper East, Upper West.

3.9 Methods of data analysis

The Statistical Package for the Social Sciences (SPSS) version 21 and Microsoft Excel were used as tools of analysis. The data was analyzed in three stages which includes univariate, bivariate and multivariate analyses. This was done to first describe the dependent and independent variables, and second to determine the nature of the associations between these variables used in the study. The data was filtered, and the unit of analysis being mothers with children under five years of age, was obtained for analyses.

3.9.1 Univariate analysis

The univariate analysis was represented with detailed background characteristics of the respondents using descriptive statistics such as frequencies, percentages, pie chart and bar charts to describe variables separately.

3.9.2 Bivariate analysis

Bivariate analysis was the second level of analysis used to examine the association between the dependent variable and each of the independent variables. This explains the extent to which all

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variables are associated with birth registration. Pearson Chi-square test of independence was used to examine the relationship between the independent and dependent variables at 5% (0.05) significance level.

3.9.3 Multivariate analysis

At the multivariate level, since the nature of the dependent variable is dichotomous, binary logistic regression was used to determine the influence of maternal education on birth registration after controlling for other factors. This stage was a consecutive test conducted on the variables to determine the extent to which independent and intermediate variables influenced the outcome of birth registration. The method tested for cofounders as well as odds ratios, which was used to interpret the `scope to which the background characteristics have influenced birth registration. The model was used because of its ease of application and the variable of interest was dichotomous that is whether the respondent's child's birth has been registered or not. Children who had been registered were coded as 1 and children who had not been registered were coded as 0. The regression equation is specified as:

$$logit(p) = \ln\left(\frac{p}{1-p}\right)$$

$$logit(p) = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + \ldots + b_kX_k$$

From the equation, p is the expected probability that a respondent's child birth will be registered whilst (I-P) is the expected outcome that a respondent's child birth will not be registered. The coefficients are represented by b0…. bp. Additionally, X_1 to X_k represent the independent variables for the study. The independent variables are age, place of residence, wealth status, marital

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status, ethnicity. The binary logistic regression test reports odd ratios, which explain the nature of the relationship between each independent variable and the dependent variable whilst controlling for other independent variables in the model at a 95% confidence interval. The odds ratio reports the net impact of each independent variable on birth registration. Thus, an odds ratio greater than 1 indicates an increased likelihood of the outcome occurring whilst an odds ratio less than one suggests the decreased likelihood of a child being registered. An odds ratio equal to 0 suggests a non-occurrence of the face of the chosen predictor.

3.10 Limitation of data

The data used in the study does not specify the exact timing when birth registration was done. This compromised the accuracy of birth registration status of the children used. The data used did not consider children that may have been registered but do not have birth certificates. This may contribute to over or underreporting since the "yes not seen" could actually be "no". Also, the data used may have reported children not registered as registered due to notifications at hospital centers mistaken for birth certificates as a result of ignorance.

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CHAPTER FOUR

SOCIO-DEMOGRAPHIC CHARACTERISTICS OF THE STUDY POPULATION

4.1 Introduction

This chapter presents the outcome of univariate and bivariate analyses of the data by the variables in the conceptual framework of this study. The purpose of the univariate analysis is to describe the background characteristics of the respondents. Results of descriptive analyses are presented using graphs, charts and tables providing information on the frequencies and relative proportions of the various categories of the variables in the study.

The bivariate analyses examine the relationship between the individual socio-demographic characteristics and birth registration. Each independent variable and the intermediate variable were run against the dependent variable birth registration. This analysis showed the extent to which each of the designated variables was related with birth registration. The strength of the relationship between each independent variable and the dependent variable was investigated using the Pearson chi-square test at 5% significance level.

4.2 Birth registration and descriptive analyses of the study population

4.2.1 Birth registration of the study population

The dependent variable of the study is the birth registration of children under five years in Ghana. The method was computed using the children who were registered as “yes” coded 1 whereas the

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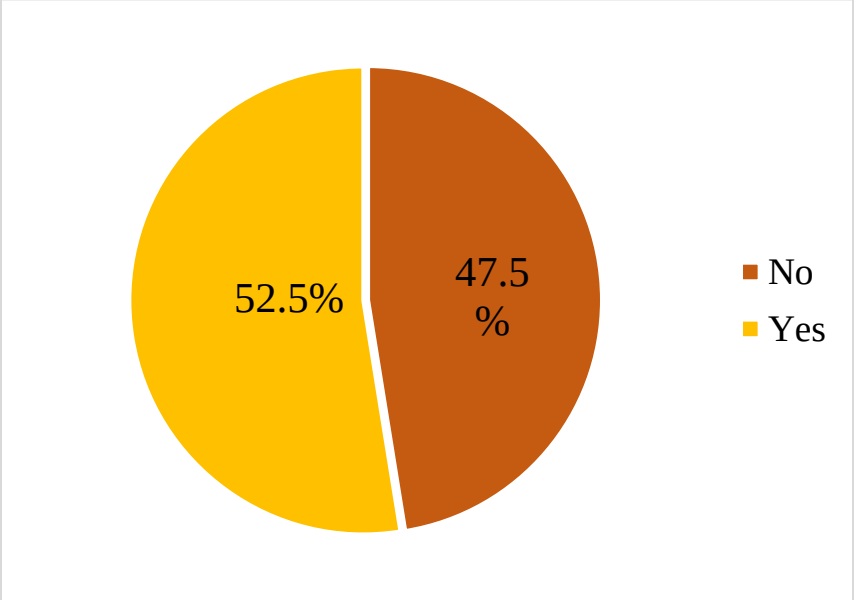
children not registered as "No" and coded as 0. However, the pie-chart below indicates that 47.5% of children under five in Ghana have not been registered (see figure 4.1).

Figure 4.1: Percentage distribution of registered births among children under five



Source: Computed from MICS (2011) data

4.2.2 Characteristics of study population

4.2.2.1 Age of mother

The demographic characteristic of age is important in the determinants of choices mothers make concerning their children. Table 4.1 shows a reasonable distribution with the modal age group (30-34) representing slightly above one quarter (26.6%) of the study population. Upon critical observation, the frequencies peak up from 20-24 to 35-39 indicating those categories having the greater number of mothers whilst the other categories represent a smaller number of mothers.

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Table 4.1 Percent distribution of mother's age

Age of mother	Percent	Number
15 -19	4.6	197
20 -24	16.6	715
25 – 29	26.0	1119
30 – 34	26.6	1146
35 – 39	17.4	751
40 – 44	6.8	292
45 – 49	2.1	92
Total	100	4312

Source: Computed from MICS (2011) data

4.2.2.2 Age of child

The age of the child in months (0-59) is presented in Table 4.2. In the table, it was indicated that infants are the highest represented age group (35.4%) whereas the least age group is 24-35 months (6.7%).

Table 4.2 Percent distribution of age of child in months

Age of child in months	Percent	Number
0-11	35.4	1525
12-23	31.4	1356
24-35	6.7	289
36-47	13.6	585
48-59	12.9	558
Total	100	4312

Source: Computed from MICS (2011) data

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4.2.2.3 Region of residence

Respondents of the survey were interviewed from all the ten administrative regions of Ghana. The region of residence is likely to influence birth registration as some regions in Ghana register births more than the others. In line with the regional distribution of population in Ghana, the results displayed in table 4.3 shows that respondents from the Ashanti Region constituted the highest proportions (18.7%) whilst those from Upper West constitute the lowest proportions (2.9%).

Table 4.3 Percent distribution of region of residence

Region	Percent	Number
Greater Accra	15.0	648
Central	10.0	431
Western	10.8	465
Volta	7.4	321
Eastern	11.1	479
Ashanti	18.7	804
Brong Ahafo	8.6	372
Northern	11.6	500
Upper East	3.9	168
Upper West	2.9	124
Total	100	4312

Source: Computed from MICS (2011) data

*4.2.*2.4 Ethnicity of household

From table 4.4 below, it is observed that Akan ethnic group has the highest proportion of respondents (41.2%) followed by Mole Dagbani ethnic group (19.3%) illustrating a great

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difference between the first and the second ethnic groups. The least represented ethnic group is the Ga/Dangme (7.8%) proving the true representation of the ethnic group in Ghana.

Table 4.4 Percent distribution of ethnicity of household

Ethnicity	Percent	Number
Akan	41.2	1778
Ga/Dangme	7.8	335
Ewe	12.8	554
Mole Dagbani	19.3	831
Others	18.9	814
Total	100	4312

Source: Computed from MICS (2011) data

4.2.2.5 Type of Place of residence

Place of residence is an essential variable in this study. Accessibility is a major determinant of birth registration since it is considered as one of the barricades of birth registration (Nomura et al, 2018). Figure 4.2 shows 40.5% of the study population are urban residents whereas 59.5% are rural residents.

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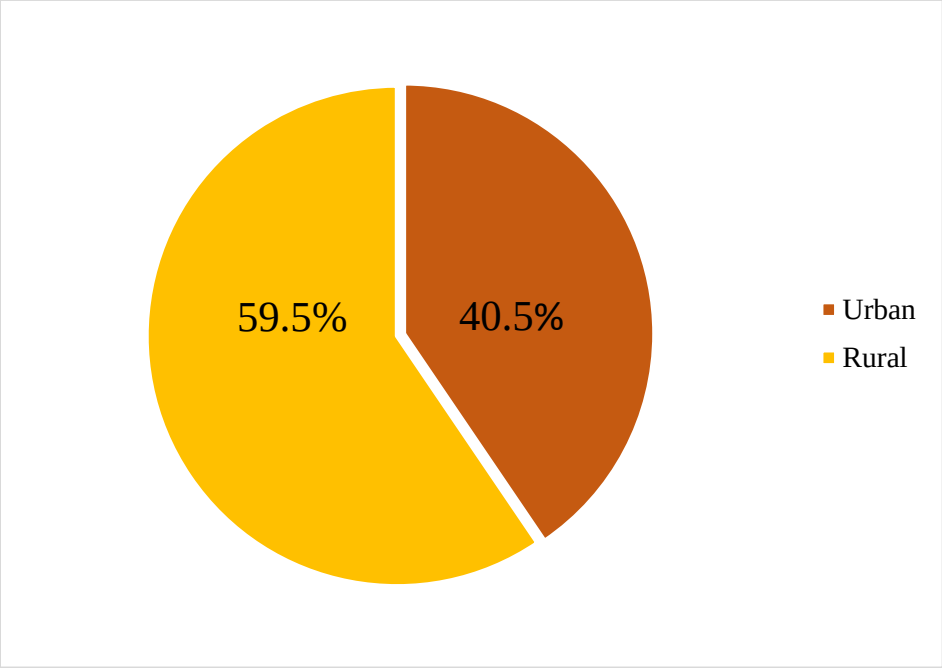
Figure 4.2 Percentage distribution of place of residence



Source: Computed from MICS (2011) data

4.2.2.6 Religion of household head

Religious affiliations can have effect on birth registration because some may have stipulated customs, beliefs and norms that prevent birth registration (Todres, 2003). It is evident in Figure 4.3 below that Christianity records the highest percentage distribution (64%) whereas Traditional/Spiritual records the least percentage distribution (7.6%.).

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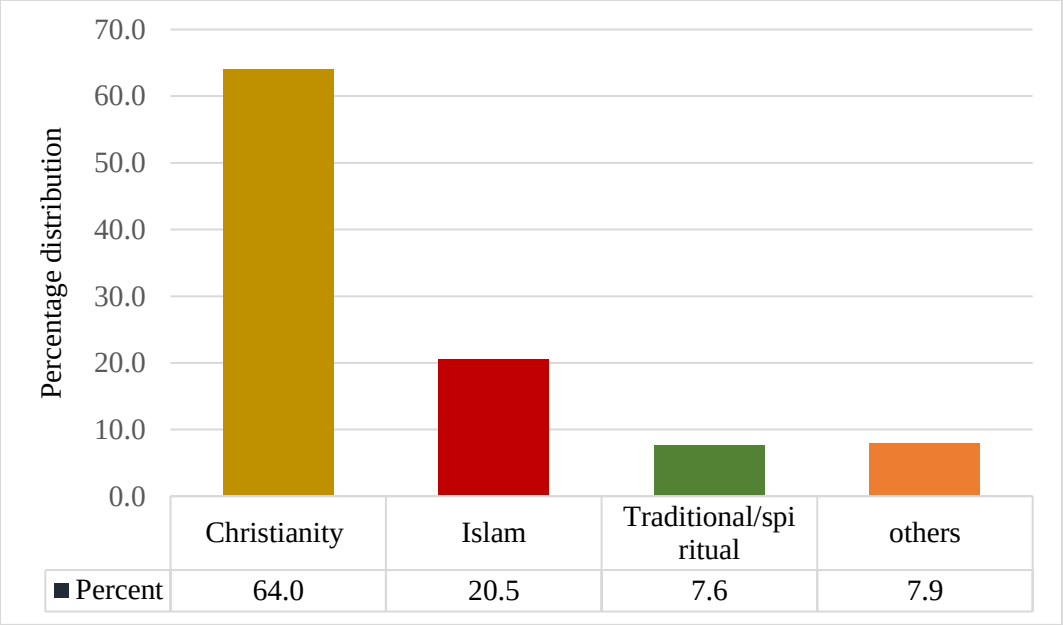
Figure 4.3 Percentage distribution of Religion of household head



Source: Computed from MICS (2011) data

4.2.2.7 Wealth status

Wealth status is also a vital factor that influences birth registration because it requires a level of financial commitment. From the bar chart below, the highest proportion of respondents are poor (45.3%) whilst the rich households represent about 35% and the middle have the least proportion (19.9%).

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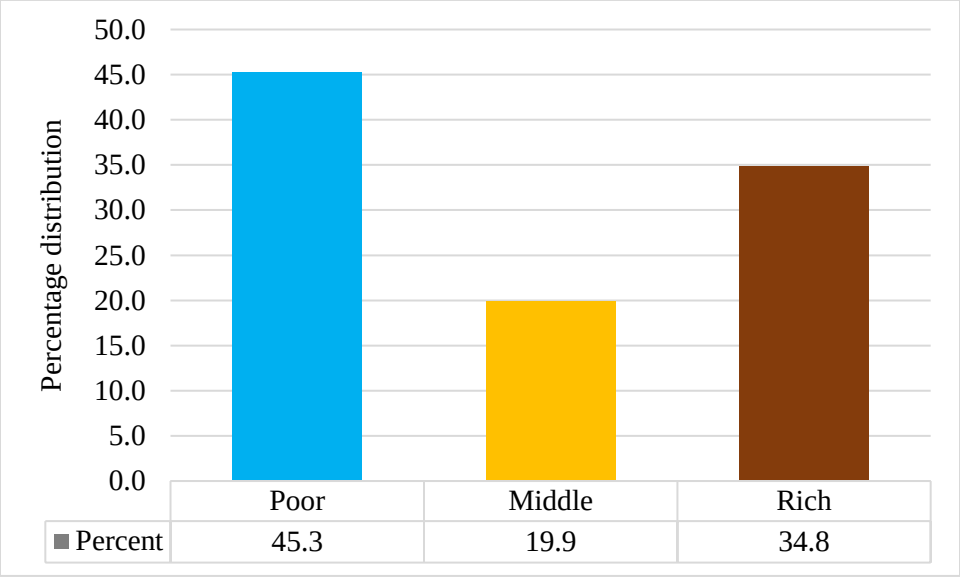
Figure 4.4 Percentage distribution of wealth status of household



Source: Computed from MICS (2011) data

4.2.2.8 Marital Status

This variable was considered since spousal support can influence the birth registration status of a child. From figure 4.4, majority (92.4 %) of the respondents were currently married/ in union and the rest were either formerly married or never married. This is expected, as most births in Ghana tend to occur within unions.

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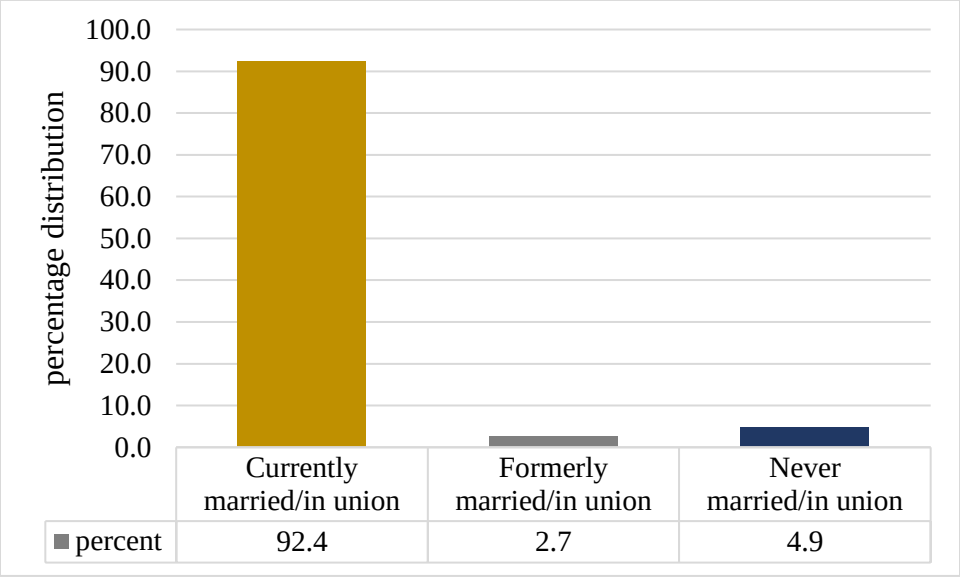
Figure 4.5 Percentage distribution of mother's marital status.



Source: Computed from MICS (2011) data

4.2.2.9 Maternal education

The background characteristics of the mother of a child are essential in the determination of birth registration of a child since children are not responsible for themselves. In this study, maternal education is measured in terms of highest level of formal education attained by mothers categorized into No education, Primary, Middle/JHS, Senior high school/higher. The percentage distribution in Figure 4.6 reveals most mothers did not attain senior high school/ higher education. Only 12.7% of the respondents achieved senior high school/higher education. However, quite a number had middle/JHS level of education (33.4%) whilst those who had only primary and No education were 22.5% and 31.4% respectively.

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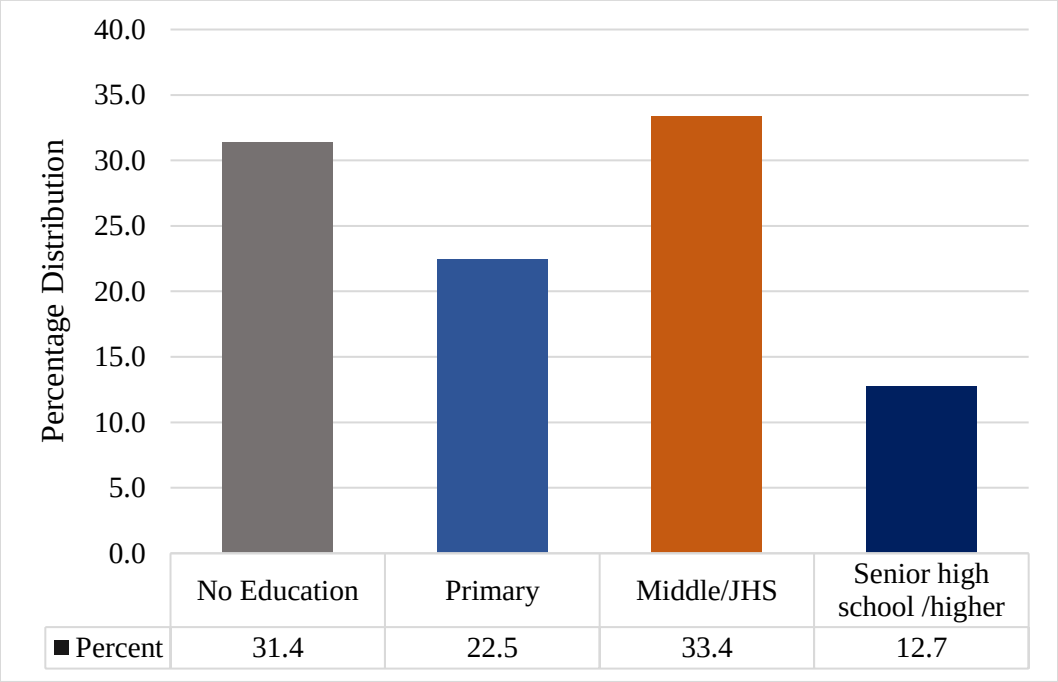
Figure 4.6 Percentage distribution of mother's education.



Source: Computed from MICS (2011) data

*4.2.*2.10 Place of delivery

Mothers are informed to register their children in the facilities they deliver at, especially in the urban areas, because some of the health facilities have birth registration offices on their premise (Fagernas & Odame, 2013). From Figure 4.7, mothers who delivered at public health facilities constituted the highest proportion (54.1%) representing a little above half of the study population. Those who had home delivery were the second highest proportion (34.1%) and those who delivered at private facilities formed the least proportion (11.4 %).

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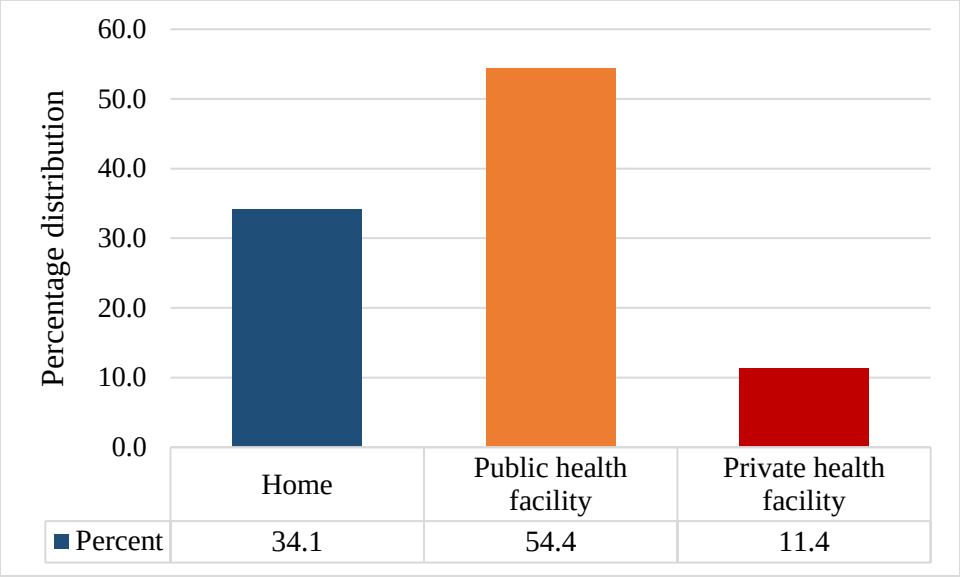
Figure 4.7 Percentage distribution of mothers by place of delivery



Source: Computed from MICS (2011) data

4.3 Bivariate analysis of variables of the dependent and independent variables

This section examines the association between birth registration and each of the independent variables by means of cross tabulations. Consequently, if the chi-square test produces asymptotic significance value less than 0.05, there is a significant association between the independent variable and birth registration. Therefore, all the variable selected namely age of mother, age of child, maternal education, marital status, place of delivery, place of residence, region of residence, ethnicity of household heads, religion of household head and wealth of household were found to be significant.

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4.3.1 Maternal education and birth registration

Maternal education is significantly associated with the birth registration indicating a close linkage between birth registration and maternal education ($p < 0.001$). The findings of Amo-Adjei and Annim (2015) confirmed it. Educational attainment of mothers has a great influence on the awareness level of so many events likewise of the importance of birth registration. It was not surprising that higher education was found to be significant determinants of mother's knowledge and practice of birth registration in Southern Nigeria (Isara & Atima, 2015; Amo-Adjei & Annim, 2015). Children whose mothers have had higher education were more likely to be registered than those whose mother had relatively achieved lower education or no education. This explains the likelihood of educated mothers possessing improved socio-economic status avoiding the economic problems linked with registration (Dake & Fuseni, 2018; Nomura et al, 2018). Table 4.5 illustrates that mothers with senior high school or higher levels had the highest percentage (73.6) of those patronizing birth registrations for their children under five. Primary and middle education fared well with 47.8 and 58.0 birth registration percentages respectively. Those with no education had the lowest birth registration (41.7) denoting that mothers with no formal education are less likely to register their births compared with mothers of other educational levels.

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Table 4.5 Percentage distribution of child's registration by maternal education

Maternal education	% birth registered	Total
No Education	41.7	1354
Primary	47.8	969
Middle	58.0	1439
Senior high school/ Higher	73.6	550
Total	52.5	4312
χ^2 = 188.248 df=3 p-value < 0.001		

Source: Computed from MICS (2011) data

4.3.2 Age of mother and birth registration

There is empirical evidence that age of mother affects birth registration (Makinde et al, 2016). Table 4.6 shows birth registration occurs most among mothers in the 30-34years age group with 60.2% of birth registered. On the other hand, mothers aged 15-19years had the lowest proportion (37.6%) of births registered. It was statistically significant because the p- value was less than 0.05.

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Table 4.6 Percentage distribution of birth registration by age of mother

Age of mother	% birth registered	Total
15-19	37.6	197
20-24	47.3	715
25-29	53.4	1119
30-34	60.2	1146
35-39	53.4	751
40-44	42.5	292
45-49	43.5	92
Total	52.5	4312

χ^2 =68.205 df = 6 p-value < 0.001

Source: Computed from MICS (2011) data

4.3.3 Age of child and birth registration

From literature, infants are less likely to be registered and this was confirmed in Table 4.7 below. Infants had the lowest proportion of aged groups with their (38.2%) births registered. There was a fair representation of the age groups as stated in literature. Birth registration increases for children with mothers aged 12-23 (62.9%) and decreased slightly at 24-35 age group. It further increased (57.6%) at aged group 36-47. Therefore, there is an association between age of child and birth registration because the p-value is less than 0.001.

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Table 4.7 Percentage distribution of birth registration by age of child in months

Age of child in months	% birth registered	Total
0-11	38.2	1524
12-23	62.9	1356
24-35	56.7	289
36-47	57.6	585
48-59	59.1	558
Total	52.5	4312
χ^2 = 202.129 df = 4 p- value < 0.001		

Source: Computed from MICS (2011) data

4.3.4 Region of residence and birth registration

Studies conducted with data from the MICS 2006 showed that Greater Accra Region recorded the highest birth registration percentage whilst Eastern Region record the least birth percentage (Amo-Adjei & Annim, 2015). Greater Accra remains the highest in this study with 75.2% of birth registration. This may be due to several factors such as accessible health facilities and births and deaths registry. Surprisingly, the Upper West Region was the second highest with 66.1% of birth registration. However, this could be as a result of interventions of non-governmental organizations such as UNICEF and Plan international, in assisting birth registration of children. However, this study records Western Region as having the lowest rate of birth registration (38.1%) immediately preceded by Volta and Brong Ahafo regions. In addition, region of residence is strongly associated with the birth registration because the p-value was less than 0.001. This confirms the MICS 2011 report which stated Greater Accra as the highest and Western region as lowest region birth registration status of children.

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Table 4.8 Percentage distribution of birth registration by region of residence

Region	% birth registered	Total
Greater Accra	75.2	648
Central	57.8	431
Western	38.1	465
Volta	39.9	321
Eastern	45.9	479
Ashanti	58.0	804
Brong Ahafo	38.4	372
Northern	46.0	500
Upper East	50.0	168
Upper West	66.1	124
Total	52.5	4312
χ^2 = 263.079 df = 9 p-value < 0.001		

Source: Computed from MICS (2011) data

4.3.5 Ethnicity of household and birth registration

Ethnicity of household was significant with chi-square test showing there is a relationship between ethnicity of household and birth registration of a child ($p<0.001$). Table 4.9 below indicated impartial representation of birth registration among the ethnic groups. Akan, the largest ethnic group in Ghana, had 55.9% birth registration representing the second highest. Ga/Dangme was the highest with 60.3% birth registration. Ga/Dangme records such a percent because most Ga/Dangme's are likely to be residents of Greater Accra region. Other categories register their children's births less at a percentage of 42.5%.

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Table 4.9 Percentage distribution of birth registration by ethnicity of household

Ethnicity	% birth registered	Total
Akan	55.9	1778
Ga/Dangme	60.3	335
Ewe	51.3	554
Mole Dagbani	52.9	831
Others	42.5	814
Total	52.5	4312
χ^2 = 49.572 df = 4 p-value < 0.001		

Source: Computed from MICS (2011) data

4.3.6 Place of residence and birth registration

The assertion that people living in urban areas are able to seek services is empirical, and it is evident in this study that residents of urban areas register their children more compared to rural dwellers. Representation of the percentage birth registration of urban and rural dwellers are 63.1% and 45.3% respectively. Also, the chi-square test was significant with the p-value less than 0.001 indicating the association between place of residence and birth registration.

Table 4.10 Percentage distribution of birth registration by place of residence

Place of residence	% birth registered	Total
Urban	63.1	1747
Rural	45.3	2565
Total	52.5	4312
χ^2 = 132.264 df = 1 p-value < 0.001		

Source: Computed from MICS (2011) data

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4.3.7 Religion of household head and birth registration

Amo-Adjei and Annim (2015) indicated that mothers in households headed by practitioners of traditional religion are less likely to register births of their children. Consequently, this study also found that mothers in such households are less likely to register births (31.6%). Mothers in Muslim headed households register their children most (56.9%). Though Christian headed households are the highest proportion of respondents, they recorded 54.8% birth registration as shown in Table 4.11. The p-value was less than 0.001 suggesting religion of household head was significantly related to birth registration.

Table 4.11 Percentage distribution of birth registration by religion of household head

Religion	% birth registered	Total
Christianity	54.8	2759
Islam	56.9	885
Traditional/spiritual	31.6	326
Others	43.0	342
Total	52.5	4312
χ^2 = 82.263a df = 3 p-value < 0.001		

Source: Computed from MICS (2011) data

4.3.8 Wealth status and birth registration

Socio-economic status of mothers is relevant in the registration of birth because of the cost involved in registering births (Dake & Fuseini, 2018). Predictably, the mothers from rich households were found to register their children most (68.4%) when compared with those from poor and middle households. Nevertheless, the poor households are the largest proportions of the sampled population under study but were figured to be the least (41.1%) registering their children

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in Table 4.12. Meanwhile, wealth status recorded the highest alpha value(255.210a) among the variables meaning that birth registration is strongly associated with wealth status.

Table 4.12 Percentage distribution of birth registration by wealth status of household

Wealth	% birth registered	Total
Poor	41.1	1953
Middle	50.8	857
Rich	68.4	1502
Total	52.5	4312
χ^2 = 255.210 df = 2	**p-value < 0.001**	

Source: Computed from MICS (2011) data

4.3.9 Marital status and birth registration

Marital status was not significant as studied by Nomura et al, (2018). Besides, a study by Dake and Fuseni, (2018) did not establish strong association between marital status and birth registration. Contrarily, Isara and Atimati (2015) found marital status to be significantly associated with birth registration as found in this study. Table 4.13 shows currently married/in union with the highest proportion in the study indicated slightly above 52% birth registration percentage same as never married/in union with the lowest proportion. But formerly married/in union records the least birth registration percentage (39.3%.).

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Table 4.13 Percentage distribution of birth registration by marital status respondents

Marital status	% birth registered	Total
Currently married/in union	52.9	3984
Formerly married/in union	39.3	117
Never married/in union	52.1	211
Total	52.3	4312
χ^2 = 8.486 df = 2 p-value = 0.014		

Source: Computed from MICS (2011) data

4.3.10 Place of delivery and birth registration

Place of delivery was significant in studies by Dake & Fuseini (2018); Nomura et al. (2018), and Isara & Atimati (2018). From Table 4.14, mothers who delivered at private health facilities registered their children under five (67.1%) whilst those who delivered at public health facilities registered their children under five (56%). Mothers who delivered at home are less likely to register their children (57.8%.) It was noticed that health facilities coped well with birth registration percentage as expected. Place of delivery was associated with birth registration in the study because the p-value was less than 0.001.

Table 4.14 Percentage distribution of birth registration by place of delivery

Place of delivery	% birth registered	Total
Home	42.2	1472
Public health facility	56.0	2348
Private health facility	67.1	492
Total	52.5	4312
χ^2 = 116.121 df = 2 p-value < 0.001		

Source: Computed from MICS (2011) data

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4.4 Summary

The univariate analysis of all the variables were computed and appropriately described with charts and tables, showing their totals. The descriptive analysis presents the number or percentage responsible for each category of a variable. The highest categories represented in each variable indicates 52.5% birth registration status, 35.4% infants, 26.6% aged group (30-34) of mother age, 59.5% rural residents, Ashanti region (18.7%) of the study population. Also, Christians form 64 % of the study population and 45.3% are poor. Currently married / in union form 92.4 % of the population under study as well as 31.4% attended middle/JHS and 54.4% delivered at public health facility respectively. In the bivariate analysis, the independent variables and the intermediate variable was statistically significant in relation to birth registration.

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CHAPTER FIVE

MATERNAL EDUCATION AND BIRTH REGISTRATION IN GHANA

5.1 Introduction

This chapter discusses the results of multivariate analyses to examine the relationship between maternal education and birth registration, taking into account other plausible control and confounding factors. It further determines the main factors that affect birth registration. Binary logistic regression model is applied to this study because the outcome variable is dichotomous thus the respondents either registered their children or not. This was categorized 'yes' or 'no' and coded 1 and 0 respectively. Multivariate analysis defines the extent of influence of the explanatory variables on birth registration.

Three binary logistic regression models were carried out to assess the determinants of birth registration. Model I examined the relationship between maternal education and the extent to which mothers register the birth of their children. Model II studied the connection between maternal education, intermediate variable (place of delivery) and birth registration. In model III, maternal education together with and all other predictor variables were entered into the model with birth registration.

In interpreting results, a reference category is chosen from the categorical variables to which other categories are compared using their odds ratios. A category with an odd ratio less than one indicates lower odds of child birth registration compared to the reference category of that variable

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whiles odds ratios greater than one indicates higher odds of being registered. The analyses were conducted at 95% significance level where the p-value should be less than 0.05.

5.2 Model 1: Influence of mother's education on birth registration

The regression analysis on model I is represented in Table 5.1 below. It involved the main independent variable (maternal education) and dependent variables (birth registration). The model shows an overall significance with a chi-square value of 192.585 with three degrees of freedom. The Nagelkerke R^2 value depicts that about 5.8% of the variation in child birth registration is explained by maternal education. It predicts about 58.8% of the response correctly. Table 5.1 indicates that maternal education has a significant relationship with birth registration with a p-value of 0.000 without controlling for the effect of other variables. The odds of registering a child increases with higher level of educational attainment as compared to mothers with no education (RC). It increased from 1.28 times among mothers with primary education to 3.91 times among mothers with higher education relative to no education, showing a positive relationship between maternal education and birth registration.

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Table 5.1 A Binary Logistic Regression Model showing the Relationship between maternal education and birth registration.

Independent variable	OR	95% CI	Sig(p-value)
Maternal education			**0.000**
No education (RC)	1.00		
Primary*	1.28	[1.087,1.515]	0.003
Middle/JHS*	1.93	[1.661, 2.243]	0.001
Senior high school/higher*	3.91	[3.139, 4.858]	0.001
Constant	*-0.337*		
Correct % prediction	*58.8%*		
Nagelkerke R^2	*5.8%*		
Model chi-square (df)	*192.585(3)*		

RC- Reference category *p<0.05 OR-Odd ratio

Source: Computed from MICS (2011) data

5.3 Model 2: Assessment of birth registration in children using maternal education and intermediate variable

The influence of maternal education on place of delivery has been observed to facilitate birth registration since educated mothers are able to seek services. The model seeks to establish how the inclusion of the intermediate variable affects birth registration of children under five. The results in Table 5.2 show the model is statistically significant (X^2 =227.516 p-value =0.000 with df=5). The model correctly predicts 59.1% of the response with a Nagelkerke R^2 value (8.3%). The overall chi-square test was significant meaning the intermediate variable yields a better fit than the constant. Evaluating the analysis, mothers who delivered at private facilities are 1.87 times more likely to register their births whilst mothers who were delivered at public facilities were 1.39 times more likely to register their births compared to those who had home delivery. The model confirms

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the expectation that mothers who delivered at health facilities are more likely to register the births of their children. Based on theories used in the study, educated mothers are able to decipher between pros and cons of seeking services including birth registration hence educated mothers access formal health services including antenatal and delivery services. This increases the likelihood of birth registration of children since health personnel are aware of registering the birth of a child, some also are trained to register birth. Likewise, Births and Deaths Registry offices are situated in some health facilities increases the likelihood of children being registered when accessing vaccination and weighing services from the health facilities.

Table 5.2 A Binary Logistic Regression Model showing the Relationship between maternal education, place of delivery and birth registration.

Variables	OR	95% CI	Sig(p-value)
Maternal education			**0.000**
No education (RC)	1.00		
Primary	1.17	[0.990,1.389]	0.066
Middle/JHS*	1.67	[1.427,1.959]	0.001
Senior high school/ higher*	3.07	[2.435,3.873]	0.001
Place of delivery			**0.000**
Home (RC)	1.00		
Public health facility*	1.39	[1.204,1.595]	0.001
Private health facility*	1.87	[1.488,2.355]	0.001
Constant	*-0.487*		
Correct % prediction	*59.1%*		
Nagelkerke R^2	*6.9%*		
Model chi-square d(f)	*227.516 (5)*		

RC- Reference category *p< 0.05 OR- Odds ratio

Source: Computed from MICS (2011) data

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5.4 Model 3: Assessment of birth registration in children using maternal education and the explanatory variables of the study.

Table 5.3 beneath specifies a detailed result of odds ratios, 95% confidence interval and p-value of categories of variables shown in the table and the general effect of the explanatory variables on birth registration. The results show that the overall model is significant 818.370, with 36 degrees of freedoms. The addition of the explanatory variable gives a better prediction than only considering maternal education. The Nagelkerke R^2 values show 23% of the variation in birth registration is explained by all the variables.

There is a significant association between region of residence and birth registration. Comparing the region of residence to the reference category (Greater Accra), Central, Western, Volta, Eastern, Ashanti, Brong Ahafo and Northern, Upper East regions were found to be less likely to register the birth of their children whilst births in Upper West are more likely to be registered.

Mothers in all the other age groups, except for the 20-24 age group who are less likely to register compared to teenage mothers (reference category), are more likely to register the births of their children. Also, the modal age group (30-34) was the most significant with the p-value = 0.009. Also, the age groups 35-39 were significant with p-value = 0.035. Currently married/in union and formerly married/in union mothers are less likely to register birth of their children compared with the never married/in union. Yet, formerly married/in union mothers were significantly related (p=0.002) to birth registration. This could be likened to formerly married mothers having more than one child, therefore are likely to know where, when and how to register their births.

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Furthermore, religion of household head had a significant relationship with birth registration. Contrary to expectation, Muslim headed households were more likely to register the births of their children whereas traditional headed households were less likely to register. The Traditional headed household was most significant with (p-value = 0.000). Poor and middle household status were less likely to register the births of their children compared to rich households. However, poor households had the utmost significance of p-value = 0.000. Results reveal ethnicity has a strong association on birth registration. Ethnicity was found not to be statistically associated with birth registration. No significant difference was observed between any other ethnic group and the reference category (Akan ethnic group).

In addition, the predictor variable, age of a child, produced a p-value 0.000 for each of the categories in the variable. This indicates a significant association between the age groups of a child and birth registration. Almost all age group categories were found to be thrice more likely to register compared to the reference category (infants) signifying children of other age groups register more than infants. However, there was no significant association observed with ethnicity and place of residence of the respondents and odds registering births of children in Ghana.

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5.3 A Binary Logistic Regression Model showing the Relationship between maternal education, explanatory variables and birth registration

Variables	OR	95 CI	Sig(p-value)
Maternal education			**0.000**
No education (RC)	1.00		
Primary	1.21	[0.989,1.489]	0.064
Middle /JHS	1.70	[1.368,2.109]	0.000
Senior high School/higher	2.42	[1.178,3.262]	0.000
Place of delivery			**0.002**
Home (RC)		1.00	
Public health facility*	1.19	[1.009,1.395]	0.039
Private health facility*	1.58	[1.220,2.047]	0.001
Region		1.00	**0.000**
Greater Accra (RC)	0.82	[0.602,1.114]	
Central	0.37	[0.277,0.505]	0.203
Western *	0.44	[0.313,0.629]	0.000
Volta*	0.47	[0.353,0.620]	0.000
Eastern*	0.71	[0.542,0.936]	0.000
Ashanti*	0.43	[0.309,0.596]	0.015
Brong Ahafo*	0.73	[0.517,1.029]	0.000
Northern	0.94	[0.604,1.466]	0.072
Upper East	1.68	[1.017,2.766]	0.787
Upper West*			0.043
Mother's age			**0.000**
15-19 (RC)	1.00		
20-24	0.98	[0.680,1.409]	0.909
25-29	1.17	[0.818,1.674]	0.389
30-34*	1.63	[1.131,2.341]	0.009
35-39*	1.49	[1.029,2.168]	0.035
40-44	1.04	[0.683,1.597]	0.841
45-49	1.23	[0.700,2.164]	0.471
Marital status			
Never married/in union (RC)	1.00		
Formerly married/in union*	0.55	[0.329,0.916]	0.002
Currently married/in union	0.88	[0.631,1.224]	0.445

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Table continued			
Ethnicity			
Akan (RC)	1.00		
Ga/Dangme	1.08	[0.804,1.449]	0.611
Ewe	1.17	[0.913,1.498]	0.214
Mole Dagbani	1.22	[0.937,1.580]	0.142
Others	0.85	[0.669,1.086]	0.197
Religion			**0.000**
Christianity (RC)	1.00		
Islam*	1.44	[1.167,1.764]	0.001
Traditional/spiritual*	0.56	[0.422,0.744]	0.000
Others	0.84	[0.649,1.076]	0.163
Wealth status			
Rich (RC)	1.00		**0.000**
Middle*	0.71	[0.580,0.871]	0.000
Poor*	0.52	[0.421,0.642]	0.001
Age of child			**0.000**
0-11 (RC)	1.00		
12-23*	3.55	[3.003,4.202]	0.000
24-35*	2.53	[1.909,3.349]	0.000
36-47*	3.02	[2.436,3.748]	0.000
48-59*****	3.01	[2.414,3.740]	0.000
Place of residence	1.00		
Urban (RC)	0.97	[0.818,1.149]	**0.717**
Rural			
Constant	*-0.449*		
Correct % prediction	*67.4%*		
Nagelkerke R^2	*23%*		
Model chi-square d(f)	*818.370 (36)*		

RC- Reference category * p<0.05 OR-Odds ratio

5.5 Discussion of findings

This section deliberates on the key verdicts of the study. It is based on the specific objectives of the study and hypotheses that were derived from findings stated in studies on birth registration. Further comparisons were made to confirm hypothesis and objectives.

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The study analyzed the socio-demographic characteristics of the sampled population that influence birth registration of children under five. The results specify that place of residence does not determine the registration of births in children as reported by other studies in Ghana (Dake & Fuseini, 2018), although an important variable to the study since accessibility has been proven to have facilitated registration of births (Nomura et al, 2018; Bhatia et al, 2017). The idea that urban dwellers are more likely to register their children more than rural dwellers still holds because urban-rural disparities in birth registration persist in most developing countries. Subsequently, Central and West Africa sub-region account for least percentage coverage in rural areas when compared to other sub-regions. Countries such as Togo, Cote d' Ivoire and Nigeria have low proportion rural coverage in West Africa sub-regions. (Makinde et al, 2016; Bhatia et al, 2017).

However, in this study the idea that urban dwellers register the birth of their children did not hold. This may be due to the improvement in birth registrations through efforts and strategies adopted by stakeholders. These strategies include using community registration volunteers, piloting population registers, extending the legal period for free registration of infants and training of community health workers to register infant at births. These strategies may have bridged the accessibility gap in registering births between the urban and rural folks as mentioned in Fargernas & Odame, 2013.

On the other hand, maternal education, place of delivery, wealth status and age of child, marital status were the socio-demographic factors that influence birth registration in this study. In all the models ran, maternal education was significantly related to birth registration and indicates increasing levels in education predicting higher odds of registering a child. Maternal education as

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described by studies has the likelihood of increasing birth registration with higher educational level of mothers. (UNICEF, 2002). This confirms the hypothesis of the study that educated mothers are more likely to register the birth of their children than uneducated mothers. One medium explored by an educated mother is social networks enabling them to seek services for their children (Harding et al, 2015).

Besides, studies establish the likelihood of educated mothers accessing services like health facilities during delivery as a result of their socio-economic status (Brito et al, 2013). Delivering at health facilities stimulates registration of births because skilled attendants at delivery are likely to know about the process of registration and inform mothers. Also, some of the registration offices are in the health facilities, hence increase the chances of easy access to registration (Fagernas & Odame, 2013). For that reason, most mothers from rich households may be educated, therefore register the births of their children than uneducated mothers. Due to the limited knowledge of uneducated mothers on subjects affecting perceptions which may either augment or decline individual's rationality in the right direction (Adi et al., 2015; Isara & Atimati, 2015; Frah, 2015). Therefore, uneducated individuals may be unable to consider the alternatives, consequences, means and ends of birth registration as indicated in the rational choice theory and social behavior model. This provides the linkage between maternal education, place of delivery and birth registration.

Similarly, the cost involved in birth registration has affected the registration of children tremendously because poor households are unable to afford it even if they are willing (Adi et al, 2015). Though coverage is low in most middle-income countries compared to high income

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countries some middle-income countries have succeeded with overall coverage. For instance, Cuba, Uzbekistan and Vietnam have 99.9%, 99.5% and 95% birth registration coverage respectively (Bhatia et al, 2017; Apland et al, 2014). Among these countries, Uzbekistan pays bonuses to parents for registering the birth of their children hence solving the challenge of the cost involved. However, in this study, the odds of registering children from poor and middle households are less compared to rich households confirming the empirical evidence in other studies (Okunlola et al, 2017).

The trends in age of child affecting birth registration in Ghana cuts across all studies carried out including this study as well as other studies in Nigeria (Amo-Adjei &Annim, 2015; Dake & Fuseini, 2018; Makinde et al, 2016). It is proven in this study that birth registration of children increases as children age from 12 to 59 months. This may be because children between 2 to 4years commence pre-school (Amo-Adjei & Annim, 2015). Consequently, several studies affirmed infants to have lesser odds of being registered compared to children above one year.

In addition, it was recognized that mother's age increases with birth registration of children, and this is likened to the intensity of reproductive age since women are likely to conceive and deliver in their mid-reproductive ages possibly with much experience and would be mature in handling issues pertaining to children (Frah, 2015).

Furthermore, the region of residence plays an important role on birth registration status in Ghana. Extreme variations occurred in birth registration of children among the regions in the` country. The results showed Western, Volta, Eastern, Ashanti, Brong Ahafo and Upper West to be having

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higher numbers of children with registration status compared to Northern, Upper east and Central regions. The findings showed Upper West as the region with most likelihood of registering children which can be explained as result of non-governmental organizations that create awareness and offer financial assistance for children to be registered (Fagernas & Odame, 2013).

Moreover, marital status of mothers determines birth registration status of a child as informed by a study conducted in Nigeria (Tobin et al, 2013; Isara & Atimati, 2015). But studies in Ghana and Lao PDR found marital status to be insignificantly related to birth registration (Dake & Fuseini, 2018; Nomura et al, 2018). These findings may be likened to spousal influences. Educated spouses may have registered at one point in time in their life and may know the importance of registering the birth of their children. As a result, they will insist on registering the birth of their child aptly. This confirms that the social behavior model indicates social status stratification which explains their ability to seek services.

Apart from the aforementioned socio-demographic characteristics, religion shows differences in birth registration status of children. Beliefs and norms of ethnic and religious groups have effects on birth registration status especially in traditional settings in Ghana where a child is protected keenly, consequential to the prevalence of the beliefs regarding witchcraft (Badioo, 2012). Unexpectedly in this study, Muslim headed households register births of their children more than Christian headed households though a study in Ghana demonstrated otherwise (Amo-Adjei & Annim, 2015). However, in India the odds registering children born in Muslim families are more than children born in Hindu families (Mohanty& Gebremedhin, 2018).

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Based on the findings from this study, it was demonstrated that educated mothers register their children more than uneducated mothers, confirming the hypothesis stated earlier. Also, the hypothesis; infants are less likely to be registered than children between 12 months and 59 months was proven, whereas the claims that residents of urban areas are more likely to be registered than resident of rural areas was refuted. Also, the factors that influence birth registration of children under five based on the models run were maternal education the determinant of interest, place of delivery, age of child, age of mother, wealth status, religion, marital status and region of residence.

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CHAPTER SIX

SUMMARY, CONCLUSION AND RECOMMENDATION

6.1 Introduction

This chapter provides brief discussions on the outcomes of the study by examining the objectives and methods used. These outcomes were linked to literature in order to draw reminiscent conclusions. Additionally, the study recommends policy and interventions to increase the percentages of birth registration of children in Ghana.

6.2 Summary

The main objective of the study was to examine the influence of maternal education on birth registration in Ghana so as to determine the importance of mothers' education on birth registration of children under five in Ghana. The study further sought to examine the association between socio-demographic characteristics of respondents and birth registration of children under five and comparing it to findings from other related studies. It further sought to assess the relationship between maternal education and birth registration by controlling for all the socio-demographic variables used in the study. The study employed data from Multiple Indicator Cluster Survey (MICS) 2011. The children and women file were merged and the needed variables were selected. The dataset was analyzed at univariate, bivariate and multivariate levels after which deductions were made.

At the Univariate level, an analysis was done to show characteristics of the socio-demographic variables of the study population. From the study, out of 4312 children under five 52.5% of births

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were registered and 40.5% were urban residents. Expectedly, Akan ethnic has the highest representation of 41.2% same as Christianity with 64%. Also, 35.4% of the sampled proportion was infants where most of the mothers were between 30-34 years. However, majority of the respondents are poor and currently married/in union.

The bivariate analysis used cross-tabulations to examine the association between the socio-demographic variables and birth registration of children under five. The association between the socio-demographic variables and birth registration were tested using chi-square results. Nevertheless, the entire variables used in the study were associated with birth registration as compared to some studies.

Binary logistic model was used to examine the associated factors of birth registration to identify significant predictors of birth registration of children under 5. Maternal education was found to predict birth registration of children under five years when all other variables were added in the model. The analysis revealed ethnicity and place of residence were not significant predictors of birth registration of children under five in Ghana. Maternal education, age of child, place of delivery, age of mother, region of residence, wealth status, religion and marital status are significant predictors of birth registration of children under five implying they are determinants of birth registration.

Place of delivery as a moderating variable between maternal education and birth registration in the conceptual framework was statistically significant and showed the moderating ability as the objective of the study set out to find. Therefore, maternal education influences the use of formal

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health services that exposes mothers to register their births since the Births and Deaths Registry offices are situated in the health facilities and some skilled birth attendants are trained to register. This makes mothers aware of the birth registration process.

In the study, out of three hypotheses formulated, two were accepted, whereas one was rejected. Educated mothers are more likely to register the birth of their children than uneducated mothers as well as infants are less likely to be registered than children between 12 months to 59 months were accepted. Surprisingly, Children born in urban areas are more likely to be registered than children born in the rural areas was not accepted. This signifies that children born at urban areas are not necessarily registered hence education of mothers is key.

6.3 Recommendation

Findings from the study stated in clear terms the significant predictors of birth registration of children under five in Ghana. The findings have repercussions for policy interventions and research. The recommendations are therefore derived from these verdicts.

It is evident that maternal education was a significant determinant of birth registration of children under five. For birth registration of children under five to increase in Ghana, there is the need to promote girl child education since educated mothers are more likely to register the birth of their children than uneducated mothers. It is imperative therefore, for the Ghana Education Service to promote girl child education because it is the girl child that grows into adulthood and becomes a mother. For this reason, Campaigns by non-governmental institutions with a theme such as "Promoting Girl Child Education Role of Family, Society and Government'' to enlighten families

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to prioritize girl child education and inform government to make policies to promote girl child education. On societal level, initiatives such as girl child scholarships funds should be created to assist needy but brilliant girls. If all these are achieved and girl child grows as a mother with the ability to secure livelihood through purchasing power and make informed decisions enabling them to access services as well as birth registration.

Furthermore, place of delivery was also found to have an effect on the registration of birth among children under five. Therefore, it is essential for Births and Deaths Registry in collaboration with Ghana health service to intensify awareness of birth registration of children under five to increase birth registration rates in Ghana through talks, symposium, education fares and posters. For home deliveries, assistants at delivery such as Traditional birth attendants (TBAs) should be enlightened as well as village chiefs, elders (assemblymen) through workshops organized by Births and Deaths Registry on the need for birth registration.

In addition, infants were found less likely to register than children aged 12 to 59 months. Nonetheless, age of a child is one of the main determinants of birth registration according to the study because birth registration increases among children above one year. Timely registration is an important factor to birth registration and this occurs within one-year period in Ghana. However, registration within that period is cost-free but most people do not take advantage of it. Hence campaigns strategies with themes such as ‘Let your child count’ must be adopted by Births and Deaths registry in collaboration with non-governmental organizations to facilitate timely registration of children. These activities will aid government and non-governmental organizations to implement adequate policies through proper planning.

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6.4 Conclusion

Birth registration is an essential system in a country since it collects information on births occurring at a particular time. This information is used as a denominator for population-based targets such as birth rates informing adequate planning promoting economic development.

For this reason, the study examines the influence of maternal education on birth registration of children under five in Ghana since maternal education is a determinant for child-related services. Maternal education was noticed to be a predictor of birth registration of children under five hence the need for campaigns to facilitates girl child education. Though basic education is free, there must be efforts to extend free education to higher levels since birth registration increases with higher levels of maternal education. Also, other important socio-demographic variables were found to have influence birth registration of children under five specifically place of delivery, age of child, age of mother, wealth status, region of residence, marital status and religion.

In Ghana, about 50% of children under five have been registered. However, this study records 52.5% birth registration of children under five in Ghana which is not far from the one established in literature. This indicates almost half of children under five in Ghana are not registered thus more work have to be done. Therefore, efforts must be made to achieve universal birth registration in Ghana to generate complete data thereby accomplishing the sustainable development goals.

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