The University of Zambia
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Dissertation

DETERMINANTS OF BIRTH REGISTRATION AMONG MOTHERS IN SELECTED RURAL AND URBAN COMMUNITIES OF THE COPPERBELT PROVINCE, ZAMBIA.

By

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Abstract

Background A birth certificate provides legal recognition of the identity of a child, and as such, birth registration in Zambia is compulsory. Data derived from birth registration is critical in health planning and research. Few births are registered despite being provided free of charge or at a minimal fee, estimated at 20.4 percent in urban areas and 6.7 percent in rural areas. The study therefore, aimed at examining determinants of birth registration amongst mothers/ guardians in selected rural and urban areas of Copperbelt Province.

Methodology: A cross-sectional comparative study using a semi-structured questionnaire was conducted in selected health facilities of Luanshya and Masaiti Districts. Data was collected between January and February 2016. Ages of respondents ranged between 15 to 49 years and a total number of 382 women attending perinatal health services in government clinics were sampled. The women were distributed proportionately, between Luanshya urban district and Masaiti rural district, thus 72 percent and 28 percent respectively.

Results: About 16.4 percent. of children in Luanshya District (urban) were registered as compared to 7.5 percent in Masaiti District. Parents/guardians living in urban areas were more than twice (OR=2.4; 95 CI, 1.1-5.3) with ($p < 0.028$) as likely to register their children compared to those living in rural areas. The finding was statistically significant showing a strong association between residence and birth registration. Some of the problems associated with birth registration include awareness and poor accessibility to registration centres especially in rural areas where the distance between places of residence and registration centres was long and demotivating. The study suggests that there is need to examine the socio-economic barriers hindering parents/guardians to register their children. This study recommends collaboration between perinatal health services and birth registration services so as to improve the coverage of registration than it is now.

Conclusion: Although a high proportion of respondents were aware of birth registration, the practice of birth registration in the two Districts was very low. Education attained and distance to registration centres significantly affected registration of birth registration.

Declaration

I **Mwango B Chomba** hereby certify that this Dissertation represents my own work and the sources I have quoted have been indicated and acknowledged by means of complete referencing. I further declare that this Dissertation has not been previously submitted for a Degree, Diploma or other qualifications of any university. It has been prepared in accordance with the guidelines for Master's degree Dissertation of the University of Zambia.

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Mwango B Chomba
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I have read this dissertation and approved it for examination.

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Certificate of completion of Dissertation

I, **Mwango B. Chomba**, do hereby certify that this dissertation is the product of my own work and in submitting it for my Master of Public Health in Population Studies programme, further attest that it has not been submitted to another university in part or whole for the award of any programme.

Signature: …….. Date: ……

I **Dr. R. N. Likwa,** having read this dissertation is satisfied that this is the original work of the author under whose name it is being presented. I confirm that the work has been completed satisfactorily and is hereby ready for presentation to the examiners.

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Certificate of Approval

This dissertation of **Mwango B. Chomba** is approved as fulfilling the requirements for the award of the Degree of Master of Public Health in Population Studies of the University of Zambia.

Signature…… Date…….

Examiner I

Signature……. Date……..

Examiner II

Signature……. Date……...

Dedication

I dedicate this study with the deepest love to my father, sisters and brother for their continuous endurance and inspiration during my period of study

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Acronyms

AIDS	Acquired Immune Deficiency Syndrome
CRC	Convention on Rights of the Child
CRVS	Civil Registration and Vital Statistics System
CSO	Central Statistical Office
ESCAP	Economic and Social Commission for Asia and the Pacific
GRZ	Government of the Republic of Zambia
HIV	Human Immunodeficiency Virus
ICCPR	International Covenant on Civil and Political Rights
ILO	International Labour Organization
SDG	Sustainable Development Goals
NGOs	Non-Governmental Organizations
SSA	Sub Saharan Africa
TB	Tuberculosis
TBA	Traditional Birth Attendant
U.N	United Nations
UNICEF	United Nations Children's Fund
UNSD	United Nations Statistics Division
WHO	World Health Organization
WB	World Bank
ZDHS	Zambia Demographic and Health Survey

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background Information

The value of birth registration as a basic human right is often overlooked due to the continuing lack of awareness. Birth registration is an important measure to secure the recognition of every person before the law, to protect individual rights and to ensure that any violation of these rights is not overlooked (UNICEF, 2000). Accurate recording and reporting of births are public goods that enable the monitoring of progress towards achieving health related development goals. Setel et al. (2007a), note that due to stagnation of birth registration systems, most Africans and Asians are born and die without leaving a trace in any legal record.

The exact number of live births registered in Zambia national birth registries for national naturalization identity is unknown. Their existence can only be estimated based on surveys (CSO, 2014). Lack of effective birth registration makes health planners rely on census data that is always outdated or on projections (Kambole and Silanda, 1994). Despite availability of a legal framework on vital birth registration, coverage remains low due to constraints in infrastructure, administrative capacity, available funds for registration and access to the population (Amo-Adjei and Annim, 2015). This is further reinforced by low awareness of birth registration among the public.

Birth registration

Birth registration is the continuous, permanent and universal recording, within the civil registry, of the occurrence and characteristics of births in accordance with the legal requirements of a country (UNICEF, 2010). Birth registration serves both a legal and statistical purpose for children within a given country. For legal purposes, birth registration is part of an effective civil registration system that legally acknowledges the existence of a person, entitles the child to a birth certificate, establishes the child's family ties, and tracks major life events from birth, to marriage and death

(ibid). Birth registration is an important source of statistical data to policy-makers, planners and health system managers and provides actionable data to improve the performance of the health system in tracking progress towards health-related goals, including the prevention of premature mortality (Li et al., 2006).

Birth Certificate

In general, a birth certificate records a child's birth, sex, parents, nationality, date and place of occurrence of the event (Dow, 1998). It is important that the registered child receives a birth certificate, since it provides a permanent, official and visible evidence of a state's legal recognition of his or her existence as a member of society.

Birth registration and the obtaining of a birth certificate are two distinct yet closely linked events (Lopez and Thomason, 2013). In some cases, the issuance of a certificate automatically follows birth registration, in others, after a period of time or only if a special application is made. Therefore, it is possible for a child to have been registered but not to have a birth certificate.

Importance of vital birth registration

Birth registration as part of an effective civil registration system acknowledges the person's existence before the law (UNICEF, 2013). As well as being a 'right' in itself, birth registration is linked with a wide range of other rights and benefits, such as securing a child's access to essential services and protecting children from abuse and exploitation. As part of a complete and accurate civil registration system, birth registration is also linked to more effective child rights planning and governance, and, more broadly, to promoting social and economic growth (ibid).

In many countries, proof of identity is essential to gaining access to basic services and to exercising fundamental human rights (Målqvist et al., 2008). Without a birth certificate a child may not be able to sit for school examinations, receive immunisations or free health care or claim rights to inheritance or legal protection in courts of law. Proof of age is critical in successfully prosecuting perpetrators of crimes against children such as child trafficking, sexual offences, early recruitment into the armed forces, child marriage and child labour (Affette et al., 1996).

Reliable vital statistics based on births are necessary for population health assessment, epidemiological research, and health planning and programme evaluation (UNICEF, 2013). Birth registration as part of a Civil Registration and Vital Statistics System (CRVS) is considered the optimal source of statistics on births. A CRVS is an integrated information system that consists of the total process of collecting information by civil registration or enumeration (Setel et al., 2007b). This is done on the frequency of occurrence of specified and defined vital events to include relevant characteristics of the events themselves and of the person or persons concerned. The data on vital events are then compiled, processed, analysed, evaluated, presented and disseminated in statistical form (UN, 2003).

Birth registration may not be regarded as vital by the community at large; by a government facing severe economic difficulties; by a country at war; or by families struggling with day-to-day survival (Joubert et al., 2012b). But a child whose birth is not registered and who is not provided with a birth certificate is denied the right to nationality, a condition that may also lead to barriers in accessing other rights including health care, education, or social assistance (ibid). Later on in life this certificate will protect the child against early marriage, child labour, early recruitment in the armed forces or, if accused of a crime, prosecution as an adult. Registration also helps the person to access further identity documents, including a passport.

Birth Registration Systems

A birth registration system may be centralized or decentralized (Todres, 2003b). A centralized administration of birth registration usually has an agency for directing, coordinating and monitoring the nationwide birth registration work. An office with such duties can promote national standards and uniform registration of all births occurring within the country and among various groups of the population. Under this type of central arrangement, the national registration agency plays not only an administrative role but also a technical one over the network of sub-national and local birth registration offices. It establishes all local registration offices, provides written materials to local registrars to guide their daily work, coordinates the registration procedures throughout the system, and supervises and evaluates the registration work of the local offices.

In a decentralized administration system, birth registration can be administered at the level of the major civil divisions, such as the state, province or department (Seidman and Seidman, 2011). In the capital city of each major division, an authority for birth registration is established to direct and monitor the registration work of the major division. Many countries with a federated political system, a large territory or a large population may adopt a decentralized administration for birth registration (Zachariah, 2011).

Not all countries having a decentralized administration for birth registration have adopted uniform legal provisions and procedures for birth registration (Mathers et al., 2005). Many such countries have made provisions to outline a model law and its regulations so that each major division may promulgate its own laws and regulations on the basis of the model. In a decentralized system of administration in birth registration, there needs to be an agency at the national level to enforce and standardize the work of birth registration and vital statistics (ibid).

Though there is universal acceptance on the importance of birth registry, Jewkes and Wood (1998) observed that birth registration in developing countries is challenged by transportation, geographical, literacy, management and organizational impediments. Mahapatra et al. (2007), note that the usefulness of vital statistics generated from birth registration depended on their quality, whose fundamental attributes are accuracy, relevance, comparability, timeliness, and accessibility. Accuracy is measured in terms of coverage, completeness and missing data, whilst accessibility is concerned with the availability and responsiveness of user service. WHO (2010), indicate that birth registration and vital statistics data are incomplete or non-existent in many developing countries, thus the non-availability of complete, continuous and timely data caused these countries to fail to fulfil their mandates.

State of Birth registration

The problem of unregistered children is global. According to the most recent figures from UNICEF 2014, 36 percent or over 48 million children are not annually registered at birth. The problem exists in every country, although most unregistered births are in South Asia (63 percent) and Sub Saharan Africa (SSA) (55 percent). Even in industrialized countries 2 percent of infants are not registered (UN, 2003).

The level of birth registration in many developing countries is very low. The availability of reliable crude estimates of the problem is lacking and if available is incomplete and unreliable. Therefore, there are many efforts in different parts of the world to improve rate of birth registration called Universal Birth registration under Plan International and UNICEF which aim to draw attention to all countries to have the sustainable strategies in order to alleviate the situation (UNICEF, 2013).

1.2 Problem Statement

Despite the imperative evident need for birth registration, most births in Zambia are not properly documented and leave no trace in any legal record or official statistic (CSO, 2014). Whilst the Births and Deaths Registration Act No. 21. Cap.210 of 1973 provides the legal framework, the problem lies with the bureaucratic way of processing the event (Kambole and Silanda, 1994). Coverage is very low due to constraints in infrastructure, administrative capacity to register births, available funds for registration, access to the population, and technology for data management (UNICEF, 2002). This may be attributed to difficulty in registering the entire population, especially for people living in villages and rural areas where there is no formal system of registration. The numbers of registration centres (district councils) are few resulting into long distances for those who may wish to register.

In the absence of a viable birth registration system or reliable mortality statistics from the health information system, vital statistics have been largely dependent on surveys or mathematical models whose results may differ from reality on the ground (CSO, 2014). Further, awareness level is low among the public as people do not understand the value of obtaining birth certificates due

to lack of sensitization. Rao et al. (2004), state that capacity building and public awareness campaigns would go a long way in improving the process of birth registration. Finding ways to improve the routine counting and recording of births is thus of vital public health importance.

The Zambia Demographic and Health Survey 2013-14 (ZDHS) reports that only 20.4 percent urban and 6.7 percent rural births are registered (CSO, 2015). Of these only 9.1 percent and 1.5 percent urban and rural respectively are reported to have a birth certificate. This represents a drop in previous national reported birth percentages in the 2007 ZDHS with urban residences reporting 27.7 percent and rural 8.6 percent. (CSO, 2009). The limitations in obtaining a certificate after registration are due to supply constraints (administrative bottlenecks) and low demand for the birth certificates by parents and guardians Although notification is free at the time of birth and up to 90 days after birth, only few parents register their children early (CSO, 2009).

Imposition of late fees, fines, or judicial procedures for late registration may compel most parents to register their children in a timely manner but also pose a barrier to those who find it difficult to register on time, such as families who live in remote areas poorly served by registration services or who cannot afford the cost of registration (UNICEF, 2002). Birth registration in Zambia should be compulsory but has eventually turned out to be voluntary. Therefore, there is a need to assess the pattern and level of vital birth registration. There is also a need of understanding individual/family, economic, institutional and socio-cultural factors that influence low rate of birth registration in both rural and urban areas.

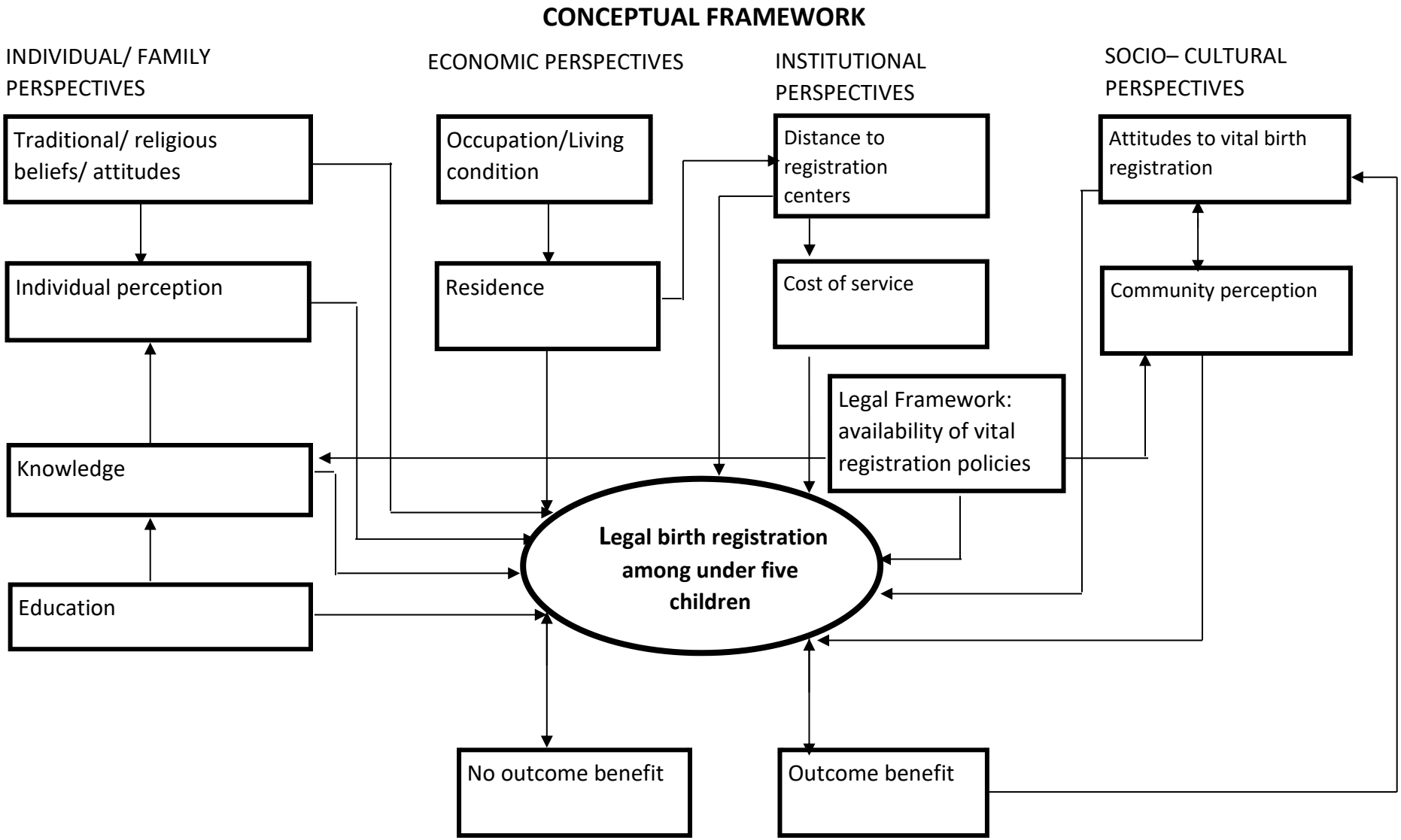


Figure 1: Determinants of birth registration and their relationship links.

From the Problem Analysis Diagram in figure 1, levels of legal vital registration operate through interaction of individual/ family, economic, institutional and socio-cultural perspectives. Individual or family views which are deeply entrenched in traditional/ religious beliefs, a common feature in the rural area arising from superstitions record lower levels of registration when compared to urban areas. Some religions strictly forbid their members from registering their children with the State. In Madagascar, where traditional naming practices are considered sacred, civil registration is not seen as crucial. It is believed that names can affect a person's luck and the illness, accident or death of a person with the same name as a child may result in that child's name being changed (Zachariah et al., 2011). These religious beliefs have culminated into traditional norms and beliefs which view registration in the negative connotation and not important to the child. Further, knowledge on importance of birth registration is limited due to low levels of education in Sub Saharan Africa especially in rural areas of these countries (ibid).

Occupation and residence are contributing factors, with low income households in densely populated dwellings unable to register their children as they are poor. In addition, lowly educated individuals do not attach importance to birth registration. Further, distance to the registration centre for both rural and urban individuals is a major determinant in child registration. The longer the distance to the registration centre, the less numbers of births registered due to the cost involved. Legal framework for the purpose of naturalization is key to birth registration. Compulsory registration effected through effective and efficient means ensures higher proportions of births are registered (Fagernäs and Odame, 2013). There is a strong correlation between community attitudes/ perceptions and levels of birth registration (Apland et al., 2014). Negative attitudes within the community lead to relatively lower numbers of children registered and hence a need in changing community attitudes through mass sensitization.

1.3 Rationale of the study

Birth registration is both a fundamental human right and an essential means of protecting a child's right to identity (UNICEF, 2000). It provides adequate statistics enabling the measurement of trends in the overall health status of a population, evaluation of the impact of health related interventions and is a key entry point for health systems strengthening. In particular, accurate recording and reporting of vital statistics are public goods that enable the monitoring of progress towards achieving health related targets of the 2030 United Nations Sustainable Development Goals (SDGs). Targets include, by 2030 ending preventable deaths of new-borns and under five children (SDG 3.2), the maternal mortality ratio to less than 70 per 100,000 live births (SDG 3.1) and end epidemics of AIDS, tuberculosis (TB) and malaria (Griggs et al., 2013). Statistics generated from this process are vital for measuring these various set targets especially for the rural areas where figures may be incomplete and/or not be available.

Changing external and internal factors create challenges to birth registration and hence efficiency and effectiveness reduces over time. Very little research has been done on determinants of birth registration with regard to socio-economic constraints, awareness levels and perceptions in Zambia. The purpose of this study therefore, is to determine factors affecting birth registration among mothers in the production and dissemination of demographic and health data. Findings will reduce the gaps in knowledge related to contributing factors that constrain having a comprehensive birth registration system.

1.4 Research Question

1. Is the extent /coverage of birth registration adequate for production and dissemination of reliable demographic and health statistics?

2. What factors can explain the extent of legal birth registration among mothers in Zambia?

1.5 General Objective

To assess and compare levels in birth registration and the associated factors among children under five years in Luanshya and Masaiti Districts.

1.6 Specific objectives

i. To determine the proportion of registered births in selected rural and urban communities
ii. To ascertain levels of awareness on birth registration among mothers
iii. To assess mothers' perception of birth registration practices

CHAPTER TWO

2.0 LITERATURE REVIEW

The purpose of this study was to examine the associations between birth registration status in relation to mother's socio-economic, spatial and demographic factors which enhance or constrain birth registration in Luanshya and Masaiti Districts. To justify the rationale for this study, a review of the literature explored the current global, regional and local status of birth registration. Birth registration as part of the CRVS system with high coverage and accurate coding of births and deaths remains the 'gold standard' source of continuous registration data on births. However, only approximately 30 percent of the world's population live in areas with 90 percent completeness of birth registration (Mahapatra et al., 2007). In most African countries, for example, less than one-quarter of births are registered (Aborigo et al., 2013). Only 2 percent of the countries in Africa and South-East Asia have complete birth registration data (Setel et al., 2007a). Many people are not aware of the importance of birth and registration for them and their families and the implications that this has for access to core government services (Nannan et al., 1998).

2.1 Global Status on Birth registration

WHO defines a live birth as a baby that breathes or shows any other sign of life after delivery, irrespective of the duration of the pregnancy. The UN view is that all babies born alive should be registered and their existence recognized whatever their gestational age and regardless of whether they are still alive at the time of registration (UN, 2003). Not all countries adopt this internationally recommended definition. Other countries have yet to apply definitions of live birth nationwide. Some states in Mexico for example, follow the international recommendations, while others do not require the registration of the birth or death of children who die within 24 hours of delivery (ibid).

In England or Wales babies are registered soon after they are born, it is a legal requirement to register the birth within 42 days and receive a birth certificate. Without such a certificate, it can be very difficult for a person to lay claim to nationality or to exercise the rights associated with

citizenship (UNICEF, 2000). In Mongolia the child must be registered within 30 days of birth and there is no provision for violation of this rule. In China registration has to take place at the mother's official residence. These bureaucratic practices are often roadblocks and affecting up to 10 million children of migrant workers resulting in none registration. In the Philippines, a baby with a gestational life of less than seven months is not regarded as live-born if the child dies within 24 hours of delivery. In this case, the baby's birth and death go unrecorded. However, if a full-term baby is born dead, it is considered a foetal death and recorded as such (Mathers and Boerma, 2010).

According to Affette et al. (1996), vital birth statistics in Jamaica often underestimate prevalence of perinatal and infant deaths. Post neonatal deaths are more likely to be registered than early neonatal deaths and frequently the birth is not registered when the infant dies. Further birth registration rates are highest in communities with high rates of hospital deliveries where institutions notify the registrar of each birth. Hospital deaths, however, were less likely to be registered than community deaths as registrars are not automatically notified of these deaths. Missing data and the underlying cause of death has resulted in poor planning in the healthcare system as prevalence on leading cause of death is often underestimated (Joseph and Castan, 2013).

The 1948 UN Universal Declaration of Human Rights and subsequent establishment of the World Bank aptly recognised human rights and development as intertwined concepts that are not mutually exclusive (Szreter, 2007). Of the cardinal issues raised in the human rights framework is the right of identity. Article 24(2) of the UN International Covenant on Civil and Political Rights (ICCPR) states “every child shall be registered immediately after birth and shall have a name”. Article 6(1), further opines: “every human being has the inherent right to life. This right shall be protected by law and no one shall be arbitrarily deprived of his life”. The Convention on Rights of the Child (CRC), is one human right instrument that has received more ratifications than any other rights treaty also recognises the rights of every child to birth registration (Gerber et al., 2011).

Unfortunately, almost 230 million children under the age of five are not registered. Sub-Sahara Africa (SSA) is home to 85 million of these children, while 135 million live in Asia and the Pacific (Cappa et al., 2014). This differs with the status of birth registration in developed countries where it is highly practiced in countries such as the United Kingdom with a rate as high as 99.9% (Adi et al., 2015). In most developing countries; national averages mask disparities between regions and

between urban and rural areas. In Myanmar, registration rates in urban areas are more than 30 percentage points higher than in rural areas (ibid). Registration is often considered to be no more than a legal formality, unrelated to child development, health, education or protection.

UNICEF (2005), reports 71 percent of countries have national birth registration rates above 50 percent however, it is ranging from 99 percent in Albania, the Democratic People's Republic of Korea, the Occupied Palestinian Territory and Uzbekistan to less than 10 percent in the United Republic of Tanzania and Zambia. Uzbekistan has provided an incentive-based system in which the state pays a bonus to parents registering their children. As a result, almost 100 percent of children under-five years are registered. In a study conducted by Plan International in Indonesia shows that 37 percent of 298 unregistered respondents admitted they did not know it was required, and 14 percent did not know the procedure for registering birth (Plan, 1999).

2.2 Sub-Sahara Africa

Several social, cultural, economic and political factors, at both macro and micro levels, have, diversely, affected high enrolment in Birth registration in most part of Africa. In SSA, for instance, the population without birth registration certificate is about 65 percent (Corbacho and Osorio Rivas, 2012). Over the years, some concerted efforts have been made to achieve acceptable up-take of birth registration in SSA, although spearheaded by Non- Governmental Organisations (NGOs) such as Plan International and UNICEF. Akande and Sekoni (2005), state that there are only five SSA countries in which there are birth registries that collect data on more than 25 percent of the population. This means that most people in SSA are born, live, and die without any record of any of these or other events in their lives. According to the World Bank CRVS Scaling-up Investment Plan 2015 – 2024, few countries in SSA use birth registration as the source of the vital events data reported (WB, 2013). Among the 14 countries which cite birth registration as the source of vital data, only four have more than 90 percent coverage of the events and these countries are mostly islands (ibid). The lack of an effective birth registration systems presents immense challenges for evidence based health and population policies. Current registration systems are frequently difficult to access and to understand, so demand for better registration service is often low (Yameogo, 2011).

In Algeria, Cape Verde, Mauritius, Seychelles and South Africa, coverage of birth registration is 90 percent or higher. An additional eleven countries, Burkina Faso, Burundi, Comoros, Congo, Madagascar, Mali, Rwanda, Sao Tome and Principe, Senegal, Sierra Leone and Togo, have birth registration coverage rates of 75–89 percent; though it is not ideal, it is sufficient for some statistical purposes (Abodunrin et al., 2014, Kiregyera, 2013). Less than 20 percent of births are registered in Chad, Ethiopia, Liberia, United Republic of Tanzania and Zambia. The patriarchal nature of most African nations has rendered vulnerable groups such as women, children (orphans in particular), widows, single mothers, and the elderly virtually secondary citizens due to the societal prejudice over them (Garenne, 2004).

Major factors that influence the birth registration levels in SSA include: the magnitude of national commitment to birth registration as a priority; the value that individuals and families place on vital birth registration; the existence of an adequate legislative framework; the existence of sufficient infrastructure to support the logistical aspects of registration; and the number of barriers that families encounter during registration (De Soto, 2000). Where birth registration exists, this is often limited to health facility based data, which are not representative as more than half of all births and deaths that occur in rural African settings do so outside of health facilities (Joubert et al., 2012b). Nigeria for example has very low levels of Birth registration level due to the low level of awareness on its significance, multiple registration practices and inadequate coordination by the National Population Commission (UNICEF, 2010).

In Zimbabwe, Plan and UNICEF work with the Registrar General and national and local NGOs on birth registration efforts through their national plan of Action on Children Orphaned and made Vulnerable by AIDS (UNICEF, 2008). Particular attention is made to ensuring the registration of marginalized children including those children affected by HIV and AIDS. The disease has orphaned at least 10.4 million children currently under 15 years worldwide and unknown numbers are denied their right to inherit parental property because there is no proof of their identity. Birth registration for all children, including giving proof of identity to those without parents, is an effective way to ease the impact of HIV/AIDS on the children left behind (ibid).

Ethiopia is among the SSA countries that has unreliable statistics on causes of under-five death due to lack of effective vital events registration and cause of death certification. A study survey in

2005 showed that neonatal mortality rate were 38 per 1000 live birth while infant mortality rate were 76.4 per 1000 live birth (Deribew et al., 2007), this figure did not reflect to the whole nation probably could have been overestimated or underestimated. In the study conducted 1994 in rural district of South Africa found that local people had complex notions of personhood, before birth and in the years following. Personhood was viewed as a process rather than a stage which is achieved through live birth, as is implied in discourses of vital registration (Jewkes and Wood, 1998). The women interviewed knew about birth registration although most had registered some or none of their children. There was little knowledge of why registration was necessary and perceptions of this among all informant groups mostly related to the need for a certificate to achieve something else, such as an identity document or welfare payment. Confusion about the procedures to be followed was found among both women and professionals, who advised them. In circumstances in which certificates were officially required, for school entry, other documentation was reported to be accepted (ibid).

2.3 Birth registration status in Zambia

In Zambia vital registration of births and deaths are incomplete since many births and deaths occur outside health care facilities, there is lack of information on the importance of birth registration, long distances to many registration centres and lack of political will to scale up the process of Birth registration(Kambole and Silanda, 1994). Zambia is one of the signatories to the convention of the Convention on Rights of the Child (CRC) and has an Act of parliament on the Rights of the Child, both of which firmly establish birth registration as a fundamental right of children.

Birth registration rates reported in surveys over the years show major differences between urban and rural rates. In a survey conducted by UNICEF (2002), the percentage difference in birth registration rates between rural and urban areas in Zambia were 3 percent and 22 percent respectively. The ZDHS in 2007, reported improved rates with urban residences reporting 27.7 percent and rural 8.6 percent (CSO, 2009). A later survey in 2013-14 by ZDHS recorded a drop from the previous rates to 20.4 percent urban and 6.7 percent rural births are registered (CSO, 2015). Of these recorded births only 9.1 percent and 1.5 percent urban and rural respectively have a birth certificate. Although notification is free at the time of birth and up to 90 days after

birth, only few parents register their children early (CSO, 2009). The variability between rural and urban situation is one of the areas to be addressed. This impacts negatively on child welfare as low rate of birth registration affects the right of the child in the country (Chodziwadziwa et al., 2014).

2.3.1 Legal frame of the system

The European, Aliens and Coloured births and deaths registration Act of 12th June, 1898 was the first legislation. Later amendments were made to the Births and Deaths Registration Act (Cap.210) and the notification of the Births of the Children of Africans (Cap.215) (Kambole and Silanda, 1994). In 1973, this legislation was replaced by the Births and Deaths Registration Act No. 21. Cap.210 of 1973 which states that: "Every live birth or still birth, as well as every death occurring throughout Zambia on or after March, 1973 is registerable under the Births and Deaths Registration Acts: 210." (GRZ, 1973). By virtue of section 5 of the Births and Deaths Registration Act, 1973, civil registration in Zambia became compulsory. The same Act provides for the appointment of registration officers and empowers the Minister of Home Affairs to make such rules as may be necessary to implement the Act (Kambole and Silanda, 1994). The purpose of this act is to naturalize all births that occur in Zambia and therefore bestow legal identification to those that are registered.

The mode of birth registration in Zambia illustrates that every person registering the birth of a child shall to the best of his/her knowledge and ability give the prescribed particulars and shall certify to the correctness either by signing or if he/she is illiterate by affixing a mark to the register or if the registration is effected without personal attendance by signing or affixing a mark to the prescribed form on which the prescribed particulars are reported to the district registrar. In the case of every child born alive after the commencement of this Act, the registration of whose birth is compulsory, it shall be the duty of the father and mother and in default of the father and mother, of the occupier of the house in which to his knowledge such child is born, and of each person present at the birth, and of the person having charge of such child, to register the birth within three months of the birth.

If the child was born out of wedlock no person shall be bound as father to register the birth of a child born out of wedlock and no person shall be entered in the register of child as the father of such child except at his own request and upon his acknowledging himself to be the father of the child and signing or affixing his mark to the register as such. Also the Act shows that if any living new-born child, the registration of whose birth is compulsory, is found exposed, it shall be the duty of any person finding such child, and of any person in whose charge such child may be placed, to give such information as the informant possesses for the purpose of registering such birth (The births and deaths registration act (GRZ, 1973).

Where the birth of any child has been registered before it has received a name, or the name by which it was registered is altered, the parent or guardian of such child may, within two years of registration on payment of the prescribed fee and on providing such evidence as the district registrar may think necessary, register the name that has been given to the child (ibid).

2.3.2 Administrative arrangements of the system

Birth registration in Zambia is centralized and is administered by the Department of National Registration, Passport and Citizenship under the Ministry of Home Affairs (UNSD, 2013). The registration is conducted at regional offices (decentralized registration) while the issuance of certificate is only carried out by the central registration office at the national level. The Ministry of Health is also involved in the registration. Births occurring in the hospitals and health institutions are provided with a hospital record of birth for onward registration of birth with the Registrar of Births.

For the registration of live births, parents or guardians need to complete the Notice of Birth form at their respective districts. If the birth occurred at the hospital or a clinic, a record of birth or an Under-Five Children's Card is attached to the notice of birth (Kambole and Silanda, 1994). The two above documents are submitted to the Registrar of Birth at the local authority in the district where the child was born. The Registrar enters the birth in the system and assigns a serial number as a means of reference. The form is endorsed with the Registrar's signature and official stamp. The Registrar forwards the registration documents to the Registrar General for issuance of a birth certificate. Birth certificates can only be issued by the Registrar General. If the birth occurred at home, an Under-Five Children's Card can be obtained from the nearest health centre within one

month of the child's birth. In the absence of the birth card or the Under-Five Children's Card, an Affidavit Form may be used for the purpose of birth registration (UNICEF, 2000).

2.4 Challenges to Birth registration

A growing body of research, attempts to understand the reasons behind low registration rates, both from supply-side deficiencies on the national level and demand-driven barriers faced by households and individuals, in an effort to inform interventions to improve coverage. The popular enhancing or constraining factors are distance, type of place of residence (rural–urban), cultural, institutional, political and legislative conditions (Corbacho and Osorio Rivas, 2012). Despite the fact that birth registration enhances social, economic and political rights, it can be utilised for unscrupulous activities. In the apartheid South Africa, civil registers were used for political surveillance and persecution (Seltzer and Anderson, 2001), used by the Nazi regime to track and persecute Jews (Moore, 1997), to restrict civil freedom in communist China and Soviet Russia (Setel et al., 2007a) and the Rwandan genocide (Longman, 2001). There is need to have strong legislation and implementation to protect data from abuse.

UNICEF (2010), conceded that inadequate funding, awareness and demand issues, accessibility and lack of political will impacted negatively on both the legal and statistical function of the birth registration system. Yameogo (2011), noted that there was selective demand for birth registry services which supported the hypothesis that "There is an absence of cross-checking between supply and demand for public services". This was shown by a host of prevailing situations on the ground which included the inadequacy of information, education and public communication policies and distance of Birth registration centres from the target people.

Strong political support, which is absent in most countries is essential for establishing linkages between different agencies and personnel involved in the registration system (Garces et al., 2012). It was political commitment that resulted in the progress achieved in the South African vital registration system, following the development of a strategy for improving it (Bradshaw and Schneider, 1995). Improvements in birth registration data require a concerted demand for valid and reliable data from policy makers, bureaucrats, social scientists, and health professionals. Short capacity building programmes on the importance and uses of data from vital registration systems

should be organized for policy makers and other government staff. These programmes can generate the political and administrative support required to devise and implement reforms in national registration systems, and subsequently monitor performance and improve accuracy (ibid).

Active public participation, which is essential in the process of birth registration is generally lacking in most developing countries. This can be increased by public awareness of the basic purposes of birth registration, and the responsibilities of the citizens and government towards it (Rao et al., 2004). Linking individual records to civil registration, and the responsibilities of the citizen's basic rights can help increase awareness such as school enrolments, property transfer mechanisms and survivor or dependency benefits (ibid).

Mistrust of authorities due to the fear of discrimination or persecution and cultural practices that conflict with birth registration systems are some other factors that prevent registration (Setel et al., 2007b). The fees, preparation of documents and travel expenses associated with registration can be a problem and also the family planning policies that penalise large families. Developing nations often lack the resources and the political will to fulfil their responsibility to ensure that every child is registered after birth. Parents are forced to travel long distances to a major city because civil registries are often centralized. Birth registration processes are usually initiated in hospital and babies born at home are less likely to be registered (UNICEF, 2002). Furthermore, where the child survival rate is low, parents may be reluctant to register their child because they do not want to incur the cost of doing so. Other, informal ways for providing proof of identity do exist such as vaccination cards and affidavits to prove the name and age of their child. However, only a birth certificate provides legal proof of identity from the start.

Education is the key that unlocks the door to many of life's opportunities. In some parts of the world, it is a legal requirement to produce a birth certificate in order to enrol in school (Todres, 2003b). This has a negative effect if birth registration is not universally accessible and if levels of literacy are low. Many countries specify an age for compulsory enrolment in education in their national legislation, but this cannot be effectively implemented if parents and the state do not know how old a child is. This means that children of extremely varied ages and levels of ability, may be put in the same class a situation that can make the learning environment ineffective (Heap and Cody, 2009).

In a technical report by UNSD (2010), it was observed that level of education was a strong determinant in vital birth registration. Children whose mothers had completed secondary education were more likely to be registered compared to children whose mothers had no education. The main reasons for not registering a child include not knowing that it is necessary to register and not knowing where to go to do so. Rural populations with lower education levels report lower numbers of registered births (Kambole and Silanda, 1994). The children of under-five years who have been left without the right to identity tend to be poor, they live in rural areas, have limited access to health care, are not attending early childhood education, have higher levels of malnutrition and have higher mortality rates. They are likely to have been born without the support of a health professional or midwife, and their mothers have low levels of formal education and are less likely to have adequate knowledge of signs of some child illnesses, birth registration and HIV /AIDS transmission (Cappa et al., 2014).

Birth registration advocacy and programming have been based on the assumption that household wealth, access to government services and education of children's caretakers would increase the likelihood of a child being registered at birth. Most countries show that birth registration is highest among the richest 20 per cent of the population, confirming that poverty is associated with low levels of birth registration (Amo-Adjei and Annim, 2015). Families with scarce resources may be deterred by fees for birth certification due to its direct costs and opportunity costs time, absence from work and household responsibilities (UNICEF, 2008). The process of the birth registration should be made much easier and consideration should be given to tying birth registration to provision of immunization services because immunization coverage is very high (Zachariah, 2011). As part of effective civil registration systems, improved rates of birth registration in all countries would have assisted in monitoring progress towards the Millennium Development Goal of reducing under-five mortality by two-thirds between 1990 and 2015 (UNICEF, 2004).

CHAPTER THREE

3.0 METHODOLOGY

3.1 Study variables

Table 1. Variables of the study

Type	Type of Variable	Operational definition	Indicator	Scale of measurement
Dependent variable	Legal birth registration status	Percentage of children under age 5 with legal birth certificates by registration.	Proportion of children with birth certificates multiplied by hundred.	Ratio
Independent Variables	Awareness	Responses to questions related to knowledge about birth registration.	Correct responses to questions rated as high, average or poor/low	Ordinal
	Perception	Ability to see, hear or become aware of birth registration through the senses.	1. Reaction to birth registration 2. Reasons for registering or not registering the child	5-point Likert-type scale with responses such as: *Very good = 1 ,* *Good = 2,* *Fair = 3,* *Poor = 4,* *Very poor= 5*
	Education	Highest education attained .	1. None 2. Primary 3. Secondary 4. College/University	Nominal
	Residence	Place of dwelling as either rural or urban	1. Urban 2. Rural	Categorical

Type	Type of Variable	Operational definition	Indicator	Scale of measurement
	Sex	A state of being either male or female	1. Male 2. Female	Categorical
	Age	Mother/ guardian aged between reproductive ages of 15-49 years.	Number of years	Numerical
	Marital Status	The condition of being either single, married, separated, divorced or widowed	1. Single 2. Married 3. Divorced 4. Remarried	Nominal
	Occupation	An activity that serves an individual's regular source of livelihood.	Type of economic activities such as 1. Peasant farmer 2. House wife 3. Petty trader 4. Business woman 5. Gainfully Employed	Nominal

3.2 Study design

The research design that was employed is a cross-sectional comparative study design with the aim of examining factors determining birth registration among mothers, who are the custodians of the child's well-being even before birth in selected urban and rural districts of the Copperbelt province.

3.3 Study sites

This study was conducted in Luanshya District, an urban district and Masaiti District, a rural district.

3.4 Study population

The study population comprised of women of reproductive age group (15-49 years) who had given birth to at least one child in the last 5 years preceding the study. Women were selected as they provide care for the children before and after birth by attending perinatal health services.

3.5 Inclusion criteria

a) Women aged 15-49 who had given birth to at least one child in last 5 years

b) Residents of the study areas

c) Willing to participate in the study

3.6 Exclusion criteria

a) Women below 15 years and above 49 years

b) Not willing to participate

c) Never had children

3.7 Sample size determination

Sample size (n) of parents/guardians in this study was determined by applying the single proportional formula (Bland, 1995).

$$n = (Z^2) P (1-p)/ d^2$$

Where: **n** = Desired total sample size

z = Standard normal deviate value (set at 1.96 which corresponds to the 95% confidence interval level).

d = Degree of precision desired, thus margin of error (will be taken to be 5% in this study).

p= Proportion of births registered

3.7.1 Sample size allocation for Luanshya District (Urban)

Item	Values
Percentage of births registered	20.4 percent*
Sample size at 95% confidence interval	250
Adjustment factor for 10 % nonresponse	100/ (100 - x)
	100/ (100 - 10) = 1.1 x 250 = 275
Total sample size	**275**

*Percentage of births registered taken from ZDHS 2013-14

3.7.2 Sample size allocation for Masaiti District (Rural)

I tem	Value
Percentage of births registered	6.7 percent*
Sample size at 95% confidence interval	97
Adjustment factor for 10 % loss	100/ (100 - x)
	100/ (100 - 10) = 1.1x 121 = 106.7
Total sample size	**107**

*Percentage of births registered taken from ZDHS 2013-14

Total Sample = 275 + 107 = **382** for two groups

3.8 Sampling procedure

i. A two stage sample design was adopted. At the first stage a sample of clinics was selected, and at the second stage mothers were selected from the clinics included in the sample. The selections were made in the two strata mentioned above.

ii. A systematic sampling technique was used in selecting 6 and 8 health facilities from Masaiti and Luanshya Districts respectively. The total number of GRZ health facilities offering perinatal care being 12 in Masaiti and 16 in Luanshya.

iii. The sampling interval for Masaiti was $I_m = \frac{12}{6} = 2$`

iv. Similarly the sampling interval for Luanshya is $I_l = 2$

v. I_m and I_l are intervals that were used in coming up with the selected health facilities. A random number starting between 1 and 2 was selected and then a sampling interval of 2 added until 6 health facilities were selected in Masaiti and 8 health facilities selected in Luanshya districts. The health facilities were serially numbered to facilitate the systematic selection of the samples.

vi. At the second stage, from the selected health facilities women of child bearing age 15 - 49 years who have had at least one child in 5 years preceding the study and attending perinatal health clinics were listed. Simple random sampling (SRS) technique was used to select the women from each of the selected health facility in Masaiti and Luanshya.

The sample design was not only clustered but was efficiently stratified. The two strata of Luanshya and Masaiti, urban and rural respectively, were significantly heterogeneous with regard to sampling units. While each one of the stratum was internally homogenous. The efficient stratification invariably reduced the total variability in the sample. It is against this background that the determination of the sample size was based on the simple random (SRS) formula. The assumption was that the design effect was close to 1 therefore the resulting sample size for the stratified-cluster sample would realistically be almost the same as that estimated for a simple random sampling design.

3.9 Data collection techniques and tools

The tool for data collection was an interviewer (face-to-face) administered structured questionnaire consisting of questions drawn from a combination of internationally and nationally validated survey instruments. Information collected included; socio-demographic characteristics of the sampled mothers/guardians, awareness on vital birth registration, perception of the

mothers/guardians with regard to birth registration, percentage of births registered and determinants associated with vital birth registration such as distance to the registration center and cost of the service.

3.10 Data processing and analysis

The data collected was checked for correctness, coded and analysed using STATA version 14 software. Continuous variables were summarised through means and standard deviations; while results pertaining to categorical variables were summarized by proportions. Cross tabulations of a number of variables and status of birth registration were performed. Mention should be made that occupations of the respondents were classified according to the United Nations International Labour Organization (UN ILO) classification of occupation (Park, 2007).

Chi-square statistical tests were used to test associations between the socio-demographic characteristics of respondents and their awareness, attitudes and perceptions to birth registration. The level of statistical significance was set at a $P < 0.05$ at a level of 5% with 95% confidence interval. This was considered indicative of a significant factor effect. The official recording of the birth of a child following delivery was considered as the correct meaning of birth registration, the registration of birth within the first 60 days of delivery was regarded as the correct timing of vital birth registration.

Bivariate logistic regression analysis examined associations with birth registration status. Birth registration status was the outcome of interest (dependent variable). The sex of the child, awareness, perception, education, residence, age and occupation were the independent variables. Multivariate logistic regression analysis was used to control for both known and unknown confounders.

3.11 Quality assurance

3.11.1 Training Assistants

Five persons were recruited and trained by the principal researcher for one day covering the objectives of the study and techniques of data collection. The five research assistants comprised three males and two females were grade twelve school leavers. These individuals spoke the local languages and had knowledge of cultural norms practiced by the target population, which ensured high quality data collection across the two districts. The training specifically focused on the general overview of the study, interviewing skills and procedures, and finally, familiarization with the study instruments. The training also emphasized procedures of how to obtain consent, maintenance of neutrality and privacy of respondents including issues pertaining to personal relationships, confidentiality and ethics.

3.11.2 Pre-test

A pretesting of the questionnaire and field logistics was done to assess the cognitive understanding and interpretation of specific questions at New Town Clinic and Masaiti A Clinic in Luanshya and Masaiti Districts respectively. These facilities were outside of the study area and not included in the sampling frame. From the insights of the results of the field-testing, the questionnaire was revised to improve the accuracy and consistency of respondents' answers. Subsequently, the questionnaire was finalized taking into account the results of the pre-test.

3.11.3 Field Editing of Questionnaires

Field editing was done by the researcher to ensure full coverage of respondents and correcting obvious implausible entries into the questionnaire such as a child not registered having a birth certificate. This was done throughout the fieldwork. Results and errors were discussed with the research assistants to correct errors and inconsistencies through call backs in the field.

3.12 Ethical considerations

Ethical issues that arose in the study mostly concerned privacy of personal information collected. The research proposal was submitted to UNZA Biomedical Research Ethics Committee for clearance to conduct the study and ethical clearance REF. No. 014-07-15 was obtained. Permission was also sought from the Ministry of Health. Informed consent was obtained from all adult participants and assent for the young participants before the interview. Participants in the study had the right to withdraw from participation without prejudice. The information that was collected was kept confidential. No names were used; however, the questionnaires were serial numbered for the purpose of data entry.

3.13 Research Project Management

The study was expected to be implemented over a period of twelve months from presentation of proposal to the graduate forum in April 2015 till final submission of dissertation in April 2016. Comments and recommendations from the Graduate Forum and Ethics Committee were addressed and changes to the final draft proposal made for re-submission to the ethics committee for approval in December 2015. Upon approval and availability of funds, a questionnaire was pretested in the field to ensure clarity in January 2016, and data collection commenced once the necessary amendments to the pretested questionnaire were made. The principle investigator was the lead researcher. Due to the wide span of the study area, the structured questionnaire was administered by five trained research assistants who had completed secondary school level education. Prior to field work, a training workshop was held for two days. Classroom teaching, researcher's field teaching and practice interviews in the field, followed by general discussion, were crucial to the motivation of the research assistants and the success of the study.

CHAPTER FOUR

4.0 RESULTS

4.1 Socio-demographic factors and birth registration

The results from this study focused on socio-demographic characteristics, awareness on birth registration, percentage of children under five years old registered and mothers'/guardians' perceptions on birth registration.

Table 2: Socio-Demographic Characteristics of parents/guardians

Characteristics	Luanshya	Masaiti	Total
Age group in years	**Response n (%)**	**Response n (%)**	**Response n (%)**
15-19	52 (19.19)	17 (15.89)	69 (18.25)
20-24	63 (23.25)	28 (26.17)	91 (24.07)
25-29	68 (25.09)	25 (23.36)	93 (24.60)
30-34	39 (14.39)	16 (14.95)	55 (14.55)
35-39	30 (11.07)	13 (12.15)	43 (11.38)
40-44	12 (4.43)	5 (4.67)	17 (4.50)
45-49	7 (2.58)	3 (2.80)	10 (2.65)
Total	**271 (100)**	**107 (100)**	**378 (100)**
	Mean age = 26.9 ± 7.6	Mean age = 27.2 ± 7.7	
Residence	**275 (72.0)**	**107 (28.0)**	**382 (100)**
Distance to registration centre			
1 Kilometre	15 (5.47)	17 (15.89)	32 (8.40)
2 Kilometres	104 (37.96)	13 (12.15)	117 (30.71)
3 Kilometres ≥	155 (56.57)	77 (71.96)	232 (60.89)
	274 (100)	**107 (100)**	**381 (100)**
Awareness to birth registration			
Yes	211 (76.73)	42 (39.25)	253 (66.23)
No	64 (23.27)	65 (60.75)	129 (33.77)
Total	**275 (100)**	**107 (100)**	**382 (100)**
Education			
No education	1 (0.36)	10 (9.35)	11 (2.88)
Primary	65 (23.64)	55 (51.40)	120 (31.41)
Secondary	144 (52.36)	35 (35.51)	182 (47.64)
College/ University	65 (23.64)	4 (3.74)	69 (18.06)
Total	**107 (100)**	**275 (100)**	**383 (100)**
Marital Status			
Married	213 (77.45)	85 (79.44)	298 (78.01)
Single	49 (17.82)	18 (16.82)	67 (17.54)
Widowed	5 (1.82)	4 (3.74)	9 (2.36)
Divorced	7 (2.55)	0(0.0)	7 (1.83)
Remarried	1 (0.36)	0 (0.0)	1 (0.26)
Total			

Characteristics	Luanshya	Masaiti	Total
Respondent Occupation	**Response n (%)**	**Response n (%)**	**Response n (%)**
Peasant farmer	11 (4.04)	80 (74.77)	91 (24.01)
House wife	117 (43.01)	7 (6.54)	124 (32.72)
Petty trader	29 (10.66)	5 (4.67)	34 (8.97))
Business	31 (11.40)	4 (3.74)	35 (9.23)
Employed	52 (19.12)	5 (4.67)	57 (15.04)
Other	32 (11.76)	6 (5.61)	38 (10.03)
Total	**272 (100)**	**107 (100)**	**379 (100)**
Income			
Less than K500	20 (8.37)	44 (42.31)	64 (18.66)
K500-K999	44 (18.41)	27 (25.96)	71 (20.70)
K1000-K1,499	31 (12.97)	12 (11.54)	43 (12.54)
K1,500 – K1,999	35 (14.64)	5 (4.81)	40 (11.66)
K2,000-K2,499	19 (7.95)	5 (4.81)	24 (7.0)
K2,500-K4,999	56 (23.43)	6 (5.77)	62 (18.08)
K5,000-K9,999	26 (10.88)	3 (2.88)	29 (8.45)
More than K10,000	8 (3.35)	2 (1.92)	10 (2.92)
Total	**239 (100)**	**104 (100)**	**343 (100)**
Religion			
Muslim	1 (0.36)	0 (0.0)	1 (0.26)
Christian	273 (99.64)	106 (99.07)	379 (99.48)
Traditional believer	0 (0.0)	1 (0.93)	1 (0.26)
Total	**274 (100)**	**107 (100)**	**381 (100)**

Note: 'n' is the number of participants per each category, n total = 382

Table 2 shows the proportion of birth registration by different socio-demographic characteristics of mothers/guardians. A total of 382 women of reproductive age who had at least one child prior to the study were interviewed distributed as 275 (72 percent) in Luanshya District and 107 (28 percent) in Masaiti. Majority of respondents in both districts lived more than 3 kilometres from a registration centre. Age as a continuous variable was normally distributed with mean age being 26.9 and Standard Deviation being 7.6 in Luanshya and mean age in Masaiti being 27.2 and standard deviation being 7.7. A greater number of the respondents were aged 25-29 and 20-24 in Luanshya and Masaiti respectively.

A larger number of respondents in Luanshya District had obtained secondary education and 43.01 percent were house wives while Masaiti had a majority of respondents with primary education of which 74.77 percent were peasant farmers. A higher proportion of respondents in Luanshya District, 56 (23.43 percent) earned K2, 500-K4, 999 whilst the majority of respondents in Masaiti District 44 (42.31 percent) earned less than K500. Over two thirds of respondents in both districts were married and a greater number were Christians. Awareness to birth registration was higher among mothers/ guardians in Luanshya District. .

Level of Birth Registration

Table 3: Association between socio-demographic factors and birth registration

Characteristics Age group in years	Luanshya Registered n (%)	Masaiti Registered n (%)	Total Registered n (%)	P value
15-19	5 (9.62)	0(0.00)	5 (7.25)	
20-24	6 (9.52)	1 (3.57)	7 (7.69)	
25-29	16 (23.53)	0 (0.0)	16 (17.20)	
30-34	7 (17.95)	2 (12.50)	9 (16.36)	0.028**
35-39	4 (13.33)	4 (30.77)	8 (18.60)	
40-44	5 (41.67)	1 (20.0)	6 (35.29)	
45-49	1 (14.29)	0(0.0)	1 (10.0)	
Total	**44 (16.24)**	**8 (7.48)**	**52 (13.76)**	
Residence				
Urban	45 (16.36)			0.024*
Rural	8 (7.48)			
Distance to registration centre				
1 Kilometre	7 (46.67)	3 (17.65)	10 (31.25)	
2 Kilometres	16 (15.38)	0 (0.0)	16 (13.68)	0.011*
3 Kilometres ≥	22 (14.19)	5 (6.49)	27 (11.64)	
Total	**45 (16.42)**	**8 (7.48)**	**53 (13.91)**	
Awareness to birth registration				
Yes	44 (20.85)	8 (19.05)	52 (20.55)	
No	1 (1.56)	0 (0.0)	1 (0.78)	0.001**
Total	**45 (16.36)**	**8 (7.48)**	**53 (13.87)**	
Education				
No education	0 (0.0)	0 (0.0)	0 (0.0)	
Primary	5 (7.69)	5 (9.09)	10 (8.33)	
Secondary	19 (13.19)	3 (7.89)	22 (12.09)	0.001**
College/ University	21 (32.31)	0 (0.0)	21 (30.43)	
Total	**45 (16.36)**	**8 (7.48)**	**21 (30.43)**	
Marital Status				
Married	36 (16.90)	8 (9.41)	44 (14.77)	
Single	7 (14.29)	0 (0.0)	7 (10.45)	
Widowed	1 (20.0)	0 (0.0)	1 (11.11)	0.877**
Divorced	1 (14.29)		1 (14.29)	
Remarried	0 (0.0)		0 (0.0)	
Total	**45 (16.36)**	**8 (7.48)**	**53 (13.87)**	
Respondent Occupation				
Peasant farmer	1 (9.09)	5 (6.25)	6 (6.59)	
House wife	19 (16.24)	1 (14.29)	20 (16.13)	
Petty trader	2 (6.90)	0 (0.0)	2 (5.88)	
Business	2 (6.45)	1 (25.0)	3 (8.57)	0.003**
Employed	16 (30.77)	1 (20.0)	17 (29.82)	
Other	5 (15.63)	0 (0.0)	5 (13.16)	
Total	**45 (16.45)**	**8 (7.48)**	**53 (13.98)**	

Characteristics	Luanshya	Masaiti	Total	P value
Income	**Registered n (%)**	**Registered n (%)**	**Registered n (%)**	
Less than K500	0 (0.0)	0 (0.0)	0 (0.0)	
K500-K999	4 (9.09)	4 (14.81)	8 (11.27)	
K1000-K1,499	4 (12.90)	2 (16.67)	6 (13.95)	
K1,500 – K1,999	4 (11.43)	1 (20.0)	5 (12.50)	
K2,000-K2,499	1 (5.26)	0 (0.0)	1 (4.17)	0.001**
K2,500-K4,999	13 (23.21)	1 (16.67)	14 (22.58)	
K5,000-K9,999	8 (30.77)	0 (0.0)	8 (27.59)	
More than K10,000	4 (50.00)	0 (0.0)	4 (40.0)	
Total	**38 (15.90)**	**8 (7.69)**	**46 (13.41)**	
Religion				
Muslim	0 (0.0)		0 (0.0)	
Christian	45 (16.48)	8 (7.55)	53 (13.98)	0.850*
Traditional believer		0 (0.0)	0 (0.0)	
Total	**45 (16.42)**	**8 (7.48)**	**53 (13.91)**	
Sex of child				
Female	19 (13.87)	5 (9.62)	24 (12.70)	
Male	25 (18.94)	3 (5.66)	28 (15.14)	0.496
Total	**44 (16.36)**	**8 (7.62)**	**52 (13.90)**	

Note: *p-value tested by Chi square **p-value tested by Fishers Exact Test

Table 3 shows association between demographic variables and birth registration. The level of statistical significance was set to $P < 0.05$. Age, residence, distance to registration centre, awareness, education, occupation and income were significantly associated with birth registration while sex of child registered, religion and marital status were not significant by their level of probability.

Possession of Birth Certificates

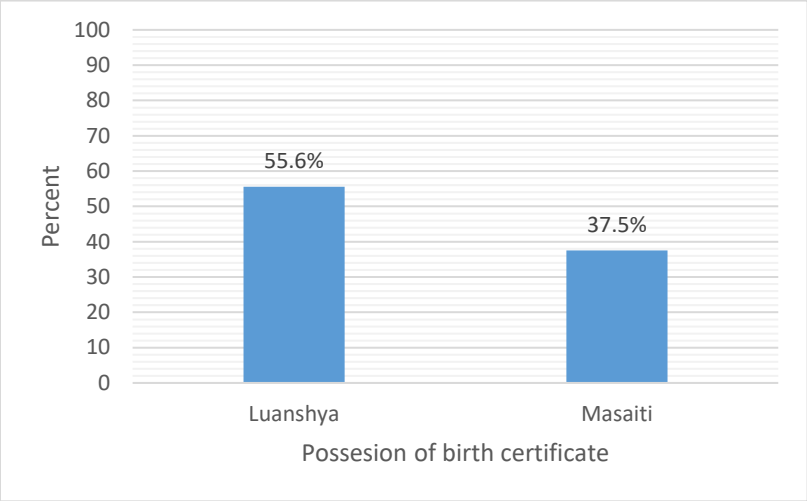


Figure 2: Percentage of registered children with birth certificates

Figure 2 shows the percentage of registered children with birth certificates. Luanshya District had 25 (55.56 percent) registered children with birth certificates whilst Masaiti had 3 (37.5 percent) registered children with birth certificates. The total number of birth certificates for the two districts was 28 (52.83 percent).

Mothers/ guardians perception of birth registration service

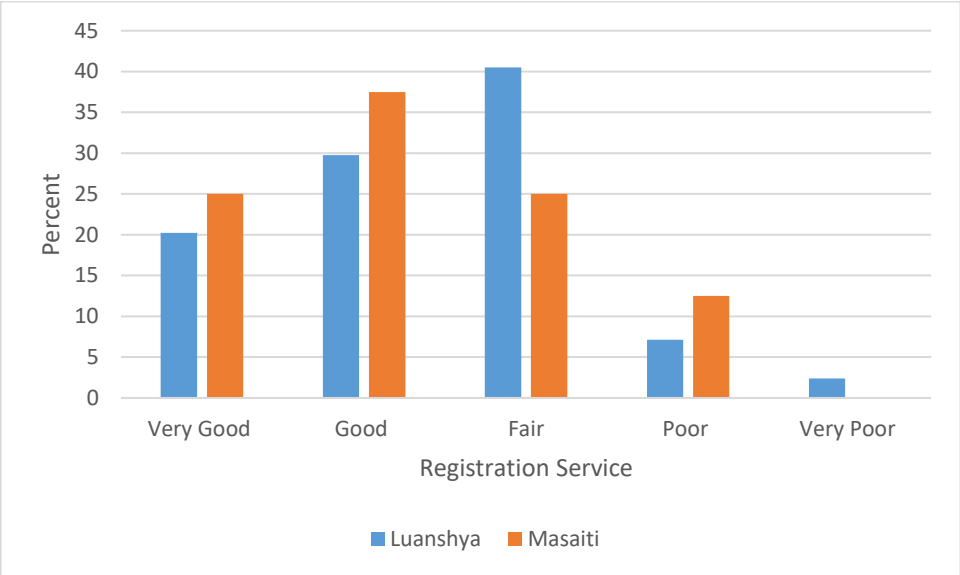


Figure 3: Respondent perception of registration service provision

Figure 3 shows the perception of birth registration service by the mothers/ guardians in both Luanshya and Masaiti Districts. Majority of respondents in Luanshya District 34 (40.48 percent) perceived the birth registration service as *fair*. A large number respondents 25 (29.76 percent) said the service was *good* and 17 (20.24 percent) said the service was *very good*. Respondents in Masaiti 3 (37.50 percent) said the service was *good* while equal numbers, 2 (25 percent) said the service was either *fair* or *very good* and 1 (12.5 percent) said the service was *very poor*.

Bivariate Logistic regression analysis showing associations between selected demographic variables with birth registration

Table 4: Bivariate analysis showing birth registration and demographic variables

Variable		Luanshya			Masaiti	
Age Group in years	***OR**	**(95% CI)**	**p-value**	***OR**	**(95% CI)**	**p-value**
15-19	1.0	Reference	Reference	1.0	Reference	Reference
20-24	1.0	0.28-3.45	0.987	1.0	Empty	
25-29	2.9	0.98-8.51	0.054	1.5	0.01-2.87	0.207
30-34	2.1	0.60-7.7.05	0.252	1.0	Empty	
35-39	1.44	0.36-5.86	0.605	0.6	0.04-8.05	0.678
40-44	6.71	1.54-29.26	0.011	1.0	Empty	
45-49	1.6	0.16-15.77	0.703	1.0	Empty	
Residence						
Rural	1.0	Reference	Reference			
Urban	2.4	1.10-5.32	0.028			
Distance to registration centre						
1 Kilometre	1.0	Reference	Reference	1.0	Reference	Reference
2 Kilometres	0.2	0.07-0.65	0.007	1	Empty	
3 Kilometres ≥	0.2	0.06-0.57	0.003	0.3	0.07-1.51	0.152
Awareness to birth registration						
Yes	1.0	Reference	Reference	1.0	Reference	
No	0.1	0.01-0.45	0.006	1.0	Empty	
Education						
Primary	1.0	Reference	Reference	1.0	Reference	Reference
Secondary	1.8	0.65-5.12	0.254	0.9	0.19-3.82	0.840
College/ University	5.7	2.00-16.37	0.001	1.0	Empty	
Marital Status						
Married	1.0	Reference	Reference	1.0	Reference	Reference
Single	0.8	0.34-2.0	0.656	1.0	Empty	
Widowed	1.2	0.13-11.32	0.855	1.0	Empty	
Divorced	0.8	0.10-7.01	0.856			
Remarried	1.0	Empty				

Variable Respondent Occupation	Luanshya *OR	Masaiti (95% CI)	p-value	*OR	(95% CI)	p-value
Peasant farmer	1.0	Reference	Reference	1.0	Reference	
House wife	1.9	0.23-16.05	0.539	2.5	0.25-25.0	0.435
Petty trader	0.7	0.60-9.09	0.815	1	Empty	
Business	0.7	0.56-8.45	0.771	5	0.43-57.22	0.196
Employed	4.4	0.52-37.71	0.172	3.8	0.35-40.15	0.275
Other	1.9	0.19-17.90	0.594	1	Empty	
Income						
K500-K999	1.0	Reference	Reference	1	Reference	
K1000-K1,499	1.5	0.34-6.43	0.600	1.2	0.18-7.33	0.882
K1,500 – K1,999	1.3	0.30-5.57	0.733	1.4	0.13-16.41	0.770
K2,000-K2,499	0.6	0.06-5.32	0.610	1.0	Empty	
K2,500-K4,999	3.0	0.91-10.04	0.071	1.2	0.10-12.62	0.909
K5,000-K9,999	4.4	1.18-16.69	0.027	1	Empty	
More than K10,000	10	1.215-22.685	0.009	1	Empty	
Sex of Child						
Male	1.0	Reference	Reference	1.0	Reference	
Female	0.7	0.36-1.36	0.263	1.7	0.40-7.83	0.450

Note: *p-value tested by logistic regression *OR: Odds Ratio

In bivariate analysis (table 4), 40-44 years age category years in Luanshya District showed significance to birth registration with 6.71 times the likelihood to registering a birth among this age group compared to age group 15-19 years. Respondents residing in Luanshya District were 2.4 times likely to register a birth compared to Masaiti District. Respondents in the Luanshya District that had college/ university education and earned more than K10,000 were 5.7 times and 10 times likely to register a birth respectively. Further respondents in Luanshya that lived 2 kilometres and 3 kilometres from a registration centre showed significance to birth registration.

CHAPTER FIVE

5.0 DISCUSSION OF STUDY FINDINGS

This section provides an interpretation of the study findings. It also makes inference to what is known to influence birth registration. The level of birth registration, awareness, perception and factors associated with birth registration are critically analysed.

5.1 Level of birth registration

The level of birth registration in Luanshya and Masaiti Districts is very low. This study has revealed that only 8 (7.5 percent) under-five year old children were registered in Masaiti District and 45 (16.4 percent) under-five year old children were registered in Luanshya District. In general, this observation is consistent with the findings of ZDHS 2013-14 conducted by the Central Statistical Office (CSO) in which, national estimates of birth registration were much higher in urban (20 percent) than rural (7 percent) areas. Similar pattern was exhibited with respect to possession of birth certificates. About 3 (37.5 percent) children had birth certificates in Masaiti District compared to 25 (55.6 percent) children in Luanshya District. The study results in Masaiti were similar with the Census 2010 rural percentages in which 37.4 percent of registered children aged 0-4 years had a birth certificate but higher than urban which reported 31 percent (CSO, 2012). The low number of children with birth certificates compared to numbers registered is consistent in SSA as reported in a study by Corbacho and Osorio Rivas (2012) which revealed that populations without birth certificates in SSA are about 65 percent.

In Tanzania, Mmbaga et al. (2012) report that only 16 percent of children in Tanzania mainland under the age of five were registered with civil authorities, and of these less than half have a birth certificate. Registration of urban births is almost four times higher (44 percent) than rural (10 percent) (ibid). In this study urban births are more than twice rural births. Like Tanzania, birth registration is low in Zambia due to lack of awareness by parents and minimal government advocacy activities. A study in Nigeria by the WB (2013) and Olorunsaiye (2007)) showed that poorly located registration centres and irregular distribution have led to lower levels of birth coverage in the range of 2 percent to 20.6 percent. A study by UNICEF (2002) in Kenya on birth

registration found that 81 percent of children from urban areas were registered while only 57 percent from rural areas. This result is not similar with the current study results, because the Kenyan Civil Registration and Vital Statistical system is much more developed.

5.2 Socio-demographic factors and birth registration

The current study indicates that in Luanshya and Masaiti Districts, no child was registered by mothers who had not attained any form of formal education. About 10 (8.3 percent) of registered births were from mothers/guardians who had attained primary education, 22 (12.1 percent) from mothers with secondary school education and 21 (30.4 percent) from mothers with college/ University education. The association was statistically significant indicating that the level of education attained leads to changes in birth registration practices. It appears that knowledge leads to changes in practice and respondents who attended higher education knew the value and importance of registering their children and obtaining birth certificates. Kambole and Silanda (1994), observed that rural populations in Zambia with lower education levels reported lower numbers of registered births. In addition, a technical report by UNSD (2010), observed that level of education was a strong determinant in vital birth registration. Children whose mothers had completed secondary education were more likely to be registered compared to children whose mothers had no education. These findings were similar to those of the study done in 1999 by the Tanzania National Bureau of Statistics which estimated that over 49 percent of children whose mothers had more than secondary education were registered compared to only 2.7 percent of children whose mothers had no education (Setel et al., 2007b). The level of education strongly influences birth registration. It has been shown that respondents who had attained primary, secondary and university/ college showed different tendencies with regard to registering their children.

The present study has shown that more respondents who were married 44 (14.8 percent) had registered their children as compared to those who were not married. This finding was similar to the results of a survey conducted by UNICEF in 2005 in Angola, Republic of Dominican, Republic of Moldova and Myanmar. The study revealed that the level of birth registration was higher in children who lived with two parents than those living with single parent (UNICEF, 2005).

In addition, the present study has shown that respondents with high income had a great propensity to register their children. The study showed that 8 (27.6 percent) of respondents with income more than 10, 00 Kwacha were more likely to register their children than none of the respondents with income less than 500 Kwacha. Most countries show that birth registration is highest among the richest 20 per cent of the population, confirming that poverty is associated with low levels of birth registration (Amo-Adjei and Annim, 2015). This study also showed that employed respondents 17 (29.8 percent) registered their children after birth more than their counterparts (peasant farmer, petty trader, Business and others). These findings were consistent with a study done in Tanzania by UNICEF, in which 25 percent of the respondents with higher income registered their children compared to 2 percent of the people with low income (UNICEF, 2007).

5.3 Awareness on birth registration

This study has shown that, although 253 (66.2) mothers/guardians had heard or been aware of birth registration services, only one fifth 52 (20.6) of them did register their children at birth. A study conducted in Nigeria showed that the level of birth registration was very low due to the low level of awareness of the respondents on the importance of birth registration. In addition, there was inadequate coordination by the National Population Commission in implementing awareness activities (Idris et al., 2006). Lack of high level of awareness depicted in the results of current study might have come about through not getting information from hospital, not knowing were to register a birth, lack of mass media announcements and lack of knowledge.

A study by Pariyo et al. (2005) showed consistent results to those of the current study. The Uganda study shows that there is a lack of awareness on the part of the respondents on the importance of birth registration as well as lack of support from institutions dealing with birth registration. These limitations account for the low birth registration.

5.4 Problems associated with birth registration

The main problem associated with birth registration in both Luanshya and Masaiti Districts is the distance to the registration centre. The current study has shown that distance from residential premises to the registration centre does influence the level of birth registration. Mothers/guardians

who lived three or more kilometres from the registration centre were less likely to register their children than those living less than three kilometres. These are similar reasons as observed in Uganda that long distances from residential premises to the registration centre discourage parents to registered births (UNICEF., 2005).

Furthermore, mother/guardians living in urban areas were twice as likely to register their children as compared to those living in rural areas because of demand (pertaining to the mothers/caretakers requirements) and supply (service delivery by relevant institutions) factors. Respondents from Urban areas were more aware of the importance of birth registration and procedures on birth registration than respondents from rural areas. These reasons were similar to those reported by Sharp (2005) concerning the situation in most developing countries. The results of studies done in Indonesia and China by Pais (2002) showed similarities with results of the current study.

Strengths and limitations

Although the current study is based on a cross sectional comparative study targeting health facilities as compared to community household and birth registration agency-based data, facility based studies have their own limitations. According to CSO (2015), more than 9 in 10 (96 percent) mothers received antenatal care from a skilled provider and only 63 percent of women received postnatal care for their last birth in the first two days after delivery.

This result cannot be generalised to the entire population of Zambia due to the fact that it was only carried out in sampled government health facilities in Luanshya and Masaiti Districts. Though these limitations exist, our study is the first of its kind in the two Districts and it was done following all procedures described in the methodology. The population was also a true representative population of the two Districts.

CHAPTER SIX

6.0 CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

The level of birth registration in Masaiti and Luanshya Districts is very low. Only 7.5 percent and 16.4 percent children were registered in Masaiti and Luanshya respectively. It is important for the districts to increase efforts, through campaigns and integrating healthcare with birth registration to enhance awareness on importance of birth registration.

Birth registration system in Zambia is highly centralized and the expenses which must be incurred in travelling from residential premises to the nearest civil registration office are a hindrance to many mothers/guardians living in rural or inaccessible areas. Remoteness from villages to district offices hinders people from accessing registration and certification services. Mothers/guardians living in urban areas are more likely to register their children than those living in rural areas. For a mother/guardian living on subsistence means, it is very costly to move from villages to where district offices are located to register and acquire certificates. Apart from travelling expenses, considerable time is lost when following up registration services and collecting certificates. That is why birth registering in rural areas is lower compared to urban areas.

Most mothers/guardians were not satisfied with birth registration services, positing that the system is bureaucratic and not friendly. Some complained of the length of time it takes to get the services as well as the birth certificate.

6.2 Recommendations

My study recommends that birth registration should be decentralized and integrated into the healthcare system. There is a need to appoint and train local/ traditional government authorities as registration officers. Therefore, the district has to increase its efforts to move registration services closer to the people by using local government offices and community registrars in integration with local/ traditional authorities. Further, there is need for enhanced collaboration between

maternal healthcare, immunization of children and birth registration services in Zambia. Community sensitization on the importance of birth registration should be reinforced to enable Masaiti and Luanshya Districts increase level of birth registration from 13.9 percent both in rural and urban areas.

In this study, it is noted that 66.2 percent of respondents were aware of birth registration but only 21.0 percent registered their children. Therefore, a continuous awareness campaign should be done at grass root level by training persons involved in registration centres (health centres) like nurses, clinical officers and districts registrars. Certification should be done by districts so that they may issue certificates in these districts. The process of birth registration should be made much easier to address barriers to birth registration and consideration should be given to tying birth registration to provision health management and information system of the Ministry of Health to achieve high coverage.

The Luanshya and Masaiti Districts should improve registration offices and acquire modern technology in doing its business (computerization of systems). This will streamline the registration process making it easier and faster on one hand, and on the other will be a control mechanism for double registration. District registration offices should establish a feedback mechanism in order to assess the progress and challenges met during registration exercise. This will spearhead improvement on registration systems. The follow up should be regular.

Due to poor infrastructure, mobile birth registration should be encouraged. Many people will access registration and certification if they will be followed. However, this approach can be successful if the registration office set a one stop centre fully fledged with all services required like registration materials and a person for verification.

The introduction of a mobile one stop centre should include all services for processing including late registration application forms. Services and persons for verification should be found at the centre. The government should review and amend the Birth and Death Registration laws to encourage compliance, which will ultimately improve the rate of birth registration. Suggestion to further explore birth registration with qualitative studies, on why mothers/guardians though aware of birth registration do not go to register their children.

REFERENCES

ABODUNRIN, O., AKANDE, T., MUSA, I. & ADERIBIGBE, S. 2014. Determinants of referral practices of clients by traditional birth attendants in Ilorin, Nigeria. *African journal of reproductive health,* 14**,** 77-84.

ABORIGO, R. A., ALLOTEY, P., TINDANA, P., AZONGO, D. & DEBPUUR, C. 2013. Cultural imperatives and the ethics of verbal autopsies in rural Ghana. *Glob Health Action,* 6**,** 18570.

ADI, A. E., ABDU, T., KHAN, A., RASHID, M. H., EBRI, U. E., COCKCROFT, A. & ANDERSSON, N. 2015. Understanding whose births get registered: a cross sectional study in Bauchi and Cross River states, Nigeria. *BMC Res Notes,* 8.

AFFETTE, M. M., KRISTIN, F., KAREN, F. E., DEANNA, A. E. & BERYL, I. 1996. Registration of births, stillbirths and infant deaths in Jamaica *International Journal of Epidemiology* 25**,** 807-813.

AKANDE, T. & SEKONI, O. 2005. A survey on birth and death registration in a semi-urban settlement in Middle-Belt Nigeria. *European Journal of Scientific Research,* 8**,** 55-60.

AMO-ADJEI, J. & ANNIM, S. K. 2015. Socioeconomic determinants of birth registration in Ghana. *BMC international health and human rights,* 15**,** 14.

APLAND, K., BLITZ, B. K., CALABIA, D., FIELDER, M., HAMILTON, C., INDIKA, N., LAKSHMAN, R., LYNCH, M. & YARROW, E. 2014. Birth registration and children's rights: a complex story.

BANDURA, A. 1997. *Self efficacy, the excercise of control* New York, Freeman

BARANOWISKI, T., LIN, L., WETTER, D., RESICOW, K. & HEARN, M. 1997. Theory as mediating variables: why are'nt community interventions working as desired. *ANN Epidemiol,* 7**,** 89-95.

BLAND, M. 1995. *An Introduction to Medical Statistics,* Oxford, Oxford University Press.

BRADSHAW, D. & SCHNEIDER, M. 1995. *Vital Registration and Statistics in South Africa: Case study metropolitan Cape Town,* Cape Town Medical Research Council.

BRUNBORG, H. & AURBAKKEN, E. 1997. Evaluation of systems for registration and identification of persons in Mozambique. Oslo: Statistics Norway.

CAPPA, C., GREGSON, K., WARDLAW, T. & BISSELL, S. 2014. Birth registration: a child's passport to protection. *The lancet global health,* 2**,** e67-e68.

CHODZIWADZIWA, W. K., BENJAMIN, D. C., FRANCESC, X. G.-O., STEPHEN TOLLMAN1, 4,, JANE, M. & GEORGES, R. 2014. The promise of record linkage for assessing the uptake of health services in resource constrained settings: a pilot study from South Africa. *BMC Medical Research Methodology,* 14**,** 71.

CORBACHO, A. & OSORIO RIVAS, R. 2012. Travelling the Distance: A GPS-Based Study of the Access to Birth Registration Services in Latin America and the Caribbean. Inter-American Development Bank.

CSO 2009. Zambia Demographic and Health Survey - 2007. Maryland: Macro Calverton.

CSO 2012. 2010 Census of Population and Housing - Volume 11 National Descriptive Tables Lusaka: Central Statistical Office

CSO 2014. Sample Vital Registration with Verbal Autopsy 2010-2012. Lusaka.

CSO 2015. Zambia Demographic and Health Survey 2013-14. Maryland: Macro Calverton.

DE SOTO, H. 2000. *The mystery of capital: Why capitalism triumphs in the West and fails everywhere else*, Basic books.

DERIBEW, A., TESSEMA, F. & GIRMA, B. 2007. Determinants of under-five mortality in Gilgel Gibe Field Research Center, Southwest Ethiopia. *Ethiopian Journal of Health Development,* 21**,** 117-124.

DOW, U. 1998. Birth registration: the 'first'right. *UNICEF, The Progress of Nations***,** 5-11.

ESCAP 2011. Towards a regional programme for the improvement of civil registration and vital statistics in Asia and the Pacific *United Nations Expert Group Meeting on International Standards for Civil*

Registration and Vital Statistics Systems. New York: United Nations Economic and Social Commission (ESCAP).
FAGERNÄS, S. & ODAME, J. 2013. Birth registration and access to health care: an assessment of Ghana's campaign success. *Bulletin of the World Health Organization,* 91**,** 459-464.
GARCES, R. G., SOBEL, H. L., PABELLON, J. A., LOPEZ, J. M., JR., DE QUIROZ CASTRO, M. & NYUNT, U. S. 2012. A comparison of vital registration and reproductive-age mortality survey in Bukidnon, Philippines, 2008. *Int J Gynaecol Obstet,* 119**,** 121-4.
GARENNE, M. 2004. Sex ratios at birth in populations of Eastern and Southern Africa. *Southern African Journal of Demography***,** 91-96.
GERBER, P., GARGETT, A. & CASTAN, M. 2011. Does the right to birth registration include a right to a birth certificate? *Netherlands Quarterly of Human Rights,* 29**,** 434.
GRIGGS, D., STAFFORD-SMITH, M., GAFFNEY, O., ROCKSTRÖM, J., ÖHMAN, M. C., SHYAMSUNDAR, P., STEFFEN, W., GLASER, G., KANIE, N. & NOBLE, I. 2013. Policy: Sustainable development goals for people and planet. *Nature,* 495**,** 305-307.
GRZ 1973. The Births and Deaths Registration Act No. 51. Cap.210 of 1973. Lusaka: Government Printers
HEAP, S. & CODY, C. 2009. The universal birth registration campaign. *Forced Migration Review,* 32**,** 20-23.
HOUNTON, S., CHAPMAN, G., MENTEN, J., DE BROUWERE, V., ENSOR, T., SOMBIÉ, I., MEDA, N. & RONSMANS, C. 2008. Accessibility and utilisation of delivery care within a Skilled Care Initiative in rural Burkina Faso. *Tropical medicine & international health,* 13**,** 44-52.
IDRIS, S., HASSAN, S., TAMBAYA, A. & SABITU, K. 2006. Documentation of births: a community approach in Tashar–Shari Giwa lga of Kaduna state, Nigeria. *Annals of Nigerian Medicine,* 2**,** 25-28.
JEWKES, R. & WOOD, K. 1998. Competing discourses of vital registration and personhood: perspectives from rural South Africa. *Social science & medicine,* 46**,** 1043-1056.
JOSEPH, S. & CASTAN, M. 2013. *The international covenant on civil and political rights: cases, materials, and commentary*, Oxford University Press.
JOUBERT, J., RAO, C., BRADSHAW, D., DORRINGTON, R. E., VOS, T. & LOPEZ, A. D. 2012a. Characteristics, availability and uses of vital registration and other mortality data sources in post-democracy South Africa. *Glob Health Action,* 5**,** 1-19.
JOUBERT, J., RAO, C., BRADSHAW, D., DORRINGTON, R. E., VOS, T. & LOPEZ, A. D. 2012b. Characteristics, availability and uses of vital registration and other mortality data sources in post-democracy South Africa. *Global health action,* 5.
KAMBOLE, K. & SILANDA, E. E. 1994. The Current Status of Civil Registration and Vital Statistics System in Zambia *African Workshop on Strategies for Accelerating the Improvement of Civil Registration and Vital Statistics System* Addis Ababa United Nations Economic and Social Council
KIREGYERA, B. The Dawning of a Statistical Renaissance in Africa. conference African Economic Development: Measuring Success and Failure, Vancouver, 2013.
LI, B., QUAN, H., FONG, A. & LU, M. 2006. Assessing record linkage between health care and Vital Statistics databases using deterministic methods. *BMC Health Serv Res,* 6**,** 48.
LONGMAN, T. 2001. Identity cards, ethnic self-perception, and genocide in Rwanda. *Documenting Individual Identity: The development of state practices in the modern world***,** 345-357.
LOPEZ, A. & THOMASON, J. 2013. Civil registration and vital statistics--everybody's business but nobody's business. *Lancet,* 381**,** 1275-6.
MAHAPATRA, P., SHIBUYA, K., LOPEZ, A. D., COULLARE, F., NOTZON, F. C. & RAO, C. 2007. Civil registration systems and vital statistics: successes and missed opportunities. *Lancet* 370**,** 1653-63.
MÅLQVIST, M., ERIKSSON, L., NGA, N. T., FAGERLAND, L. I., HOA, D. P., WALLIN, L., EWALD, U. & PERSSON, L.-Å. 2008. Unreported births and deaths, a severe obstacle for improved neonatal

survival in low-income countries; a population based study. *BMC international health and human rights,* 8**,** 4.
MATHERS, C. & BOERMA, T. 2010. Mortality measurement matters: improving data collection and estimation methods for child and adult mortality. *PLoS Med,* 7**,** e1000265.
MATHERS, C. D., FAT, D. M., INOUE, M., RAO, C. & LOPEZ, A. D. 2005. Counting the dead and what they died from: anassessment of the global status of cause of death data. *Bull World Health Organ,* 83**,** 1717.
MBONDJI, P. E., KEBEDE, D., SOUMBEY-ALLEY, E. W., ZIELINSKI, C., KOUVIVIDILA, W. & LUSAMBA-DIKASSA, P. S. 2014. Health information systems in Africa: descriptive analysis of data sources, information products and health statistics. *J R Soc Med,* 107**,** 34-45.
MMBAGA, B. T., LIE, R. T., OLOMI, R., MAHANDE, M. J., KVÅLE, G. & DALTVEIT, A. K. 2012. Cause-specific neonatal mortality in a neonatal care unit in Northern Tanzania: a registry based cohort study. *BMC pediatrics,* 12**,** 1.
MOORE, B. 1997. *Victims and survivors: the Nazi persecution of the Jews in the Netherlands, 1940-1945*, Arnold.
NANNAN, N., BRADSHAW, D., MAZUR, R. & MAPHUMULO, S. 1998. What is the infant mortality rate in South Africa? The need for improved data. *S Afr Med J,* 88**,** 1583-7.
NDONG, I., GLOYD, S. & GALE, J. 1994. An evaluation of vital registers as sources of data for infant mortality rates in Cameroon. *International journal of epidemiology,* 23**,** 536-539.
OLORUNSAIYE, J. 2007. GIS Application in Health Care Delivery: A Case Study of Hospital Availability and Accessibility in Gombe LGA of Gombe State. *Unpublished PGD in GIS submitted to Dept. of Geo-Informatics, Federal School of Surveying, Oyo*.
PAIS, M. S. 2002. Birth registration: Right from the start. *UNICEF Innocenti Digest,* 9**,** 1-32.
PARIYO, G. W., GOUWS, E., BRYCE, J., BURNHAM, G. & TEAM, U. I. I. S. 2005. Improving facility-based care for sick children in Uganda: training is not enough. *Health policy and planning,* 20**,** i58-i68.
PLAN 1999. Unregistered Child Project: An Assessment to promote the 'First Right of the Child' - Name and Nationality in Indonesia. Jakarta: Plan International
RAO, C., BRADSHAW, D. & MATHERS, C. D. 2004. Improving death registration and statistics in developing countries: Lessons from sub-Saharan Africa. *Southern Africa Journal of Demography* 9**,** 81-99.
SEIDMAN, A. & SEIDMAN, R. B. 2011. Instrumentalism 2.0: Legislative Drafting for Democratic Social Change. *Legisprudence,* 5**,** 95-142.
SEIDMAN, A., SEIDMAN, R. B. & ABEYSEKERA, N. 2001. *Legislative Theory, Methodology and Techniques: A Practical Manual for Drafters,* London, Kluwer Law.
SEIDMAN, A., SEIDMAN, R. B. & MORRISON, S. 2010. *Using law to improve vital statistics in Africa,* New York United Nations Economic Commission for Africa.
SELTZER, W. & ANDERSON, M. 2001. The dark side of numbers: The role of population data systems in human rights abuses. *Social Research***,** 481-513.
SETEL, P. W., MACFARLANE, S. B., SZRETER, S., MIKKELSEN, L., JHA, P., STOUT, S. & ABOU, C. Z. 2007a. A scandal of invisibility: making everyone count by counting everyone. *Lancet,* 370**,** 1569-1577.
SETEL, P. W., MACFARLANE, S. B., SZRETER, S., MIKKELSEN, L., JHA, P., STOUT, S., ABOUZAHR, C. & GROUP, M. O. V. E. W. 2007b. A scandal of invisibility: making everyone count by counting everyone. *The Lancet,* 370**,** 1569-1577.
SHARP, N. 2005. Universal Birth Registration—A Universal Responsibility. *Plan International, Londres***,** 11.
SZRETER, S. 2007. The right of registration: development, identity registration, and social security—a historical perspective. *World Development,* 35**,** 67-86.
TOBIN E. A, OBI A I & ISAH E. C 2013. Status of birth and death registration and associated factors in the South-south region of Nigeria. . *Ann Niger Med***,** 3-7.

TODRES, J. 2003a. Birth Registration: an essential first step toward ensuring the rights of all children. *Human Rights Brief,* 10**,** 32-35.
TODRES, J. 2003b. Birth Registration: an essential first step towards ensuring the rights of all children. *Human Rights Brief* 10**,** 32-35.
UN 2003. *Handbook on Civil Registration and Vital Statistics Systems: Policies and Protocols for the Release and Archiving of Individual Records,* New York, United Nations
UNICEF 2000. Progress since the World Summit for Children. UNICEF statistics
UNICEF 2002. Birth Registration: Right from the Start. *Innocenti Digest* Florence: UNICEF Innocenti Research Centre.
UNICEF 2005. The'Rights' start to life: a statistical analysis of birth registration.
UNICEF 2007. Monitoring the situation of children and women: findings from the Ghana Multiple Indicator Cluster Survey, 2006. *New York: UNICEF*.
UNICEF. 2008. Strengthening birth registration in Africa: opportunities and partnerships. Available: http://www.unicef.org/esaro/Technical_paper_low_res_.pdf [Accessed 11 May 2015].
UNICEF 2010. UNICEF Nigeria Fact Sheet: Birth Registration in Nigeria. New York: United Nations Children Funds
UNICEF 2013. A passport to protection: a guide to birth registration programming. New York: UNICEF.
UNICEF. 2005. *Birth registration*, UNICEF.
UNSD 2010. Status of Civil Registration and Vital Statistics in the SADC Region. New York.
UNSD 2013. Status of Civil Registration and Vital Statistics in the SADC Region. New York: United Nations
WB 2013. Global Civil Registration and Vital Statistics: Scaling Up Investment Plan 2015 – 2024. Washington DC.
WHO. 2010. *Civil registration and vital statistics* [Online]. Available: http://www.who.int/classifications/en/ [Accessed 18 December 2014].
YAMEOGO, A. G. 2011. *Civil registration status in Burkina Faso* [Online]. Available: http://dialogueuroafricainmd.net/web/uploads/activity/civil_registry/newsletter/Burkina_Faso_EN.pdf [Accessed 02 February 2015].
ZACHARIAH, R. 2011. Vital registration in rural Africa: is there a way forward to report on health targets of the Millennium Development Goals? *Trans R Soc Trop Med Hyg,* 10**,** 1016.
ZACHARIAH, R., MWAGOMBA, B., MISINDE, D., MANDERE, B. C., BEMEYANI, A., GININDZA, T., CORTIER, H., BISSEL, K., JAHN, A. & HARRIES, A. D. 2011. Vital registration in rural Africa: is there a way forward to report on health targets of the Millennium Development Goals? *Trans R Soc Trop Med Hyg,* 105**,** 301-9.

LIST OF APPENDICES

Appendix I: Information Sheet

INFORMATION SHEET

TITLE OF THE STUDY: DETERMINANTS OF VITAL BIRTH REGISTRATON AMONG MOTHERS IN SELECTED RURAL AND URBAN COMMUNITIES OF THE COPPERBELT PROVINCE, ZAMBIA.

You are asked to participate in a research study conducted by Mr. Mwango B Chomba from The University of Zambia. The study will be conducted in partial fulfilment of Master of Public Health in Population Studies. You have been selected as a possible participant in this study because you are a mother to a child under five years within the targeted age group.

1. PURPOSE OF STUDY

The study is designed to identify factors associated with birth registration among mothers in Luanshya and Masaiti Districts of Zambia. The aim is to find out if mothers have adequate information on birth registration and its importance for the wellbeing of their children. Further the study would like to establish the number of children registered and reasons why other children have not been registered. Information will be collected for this purpose regarding birth registration on both the mother and child. You are being asked to participate in this study because you live in the community serviced by this health facility where the study is taking place and have particular knowledge and experiences with the community, or other knowledge and experiences that may be important to the study.

2. PROCEDURES

If you volunteer to participate in this study, we would ask you to do the following things:

(i) You will select any location, either in the health facility or a location you feel comfortable.

(ii) You will sit with a trained interviewer and answer questions about your awareness on birth registration services provided in the community, what factors you think will motivate or hinder parents or guardians including you to use these services and finally

your comments on what should be done to increase the number of birth registration in your district.

3. POTENTIAL RISKS AND DISCOMFORTS

The study does not have any potential risks although discomforts may be experienced during responses to some questions and a bit of your time that will be taken as you answer the questions. In addition, participants will not be forced to share information that they are not comfortable to disclose and have the right to ask that certain information be omitted if they want.

In the event that any participant experiences discomfort, the researcher will stop the questions and allow for such information to be omitted. Depending on the circumstances, the researcher will avoid questions that may seem to cause discomfort to any participants and allow for withdrawal of participants where necessary.

4. POTENTIAL BENEFITS TO SUBJECTS AND OR TO SOCIETY

There may be no direct benefit to you from participating in the study. However participant information you provide will increase our understanding on factors associated with birth registration in the district.

5. PAYMENT FOR PARTICIPATION

There are no monetary benefits for participating in this study. However, by participating in the study, you will contribute to information that will assist District Registration Officers to consider community opinions as they implement birth registration programmes. Therefore the time you will spend in discussing the issue is highly appreciated.

6. CONFIDENTIALITY

Any information that is obtained in connection with the study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law. Confidentiality will be maintained by ensuring that information collected from the subject will not be directly linked to individuals. Your identity will be kept anonymous by using a number to identify you instead of your name.

7. VOLUNTARY PARTICIPATION

You can choose whether to be in this study or not. Your participation in this study is purely voluntary. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind. You may also refuse to answer any questions you do not want to answer and still remain in the study. The investigator may withdraw you from this research if circumstances arise which warrant doing so.

8. INFORMATION AND CLARIFICATION

Please be informed that if you at any time need clarifications over the research study, direct your questions to:

MWANGO B. CHOMBA
UNIVERSITY OF ZAMBIA
SCHOOL OF MEDICINE
DEPARTMENT OF PUBLIC HEALTH
P.O. BOX 50110
LUSAKA
CELL # +260966 777 393
EMAIL: cmwango@gmail.com

OR

THE CHAIRPERSON
BIOMEDICAL RESEARCH ETHICS COMMITTEE OF UNZA
UNIVERSITY OF ZAMBIA
P.O. BOX 50110
LUSAKA, ZAMBIA
TELEPHONE # +260 211 256 067
TELEGRAMS: UNZA, LUSAKA
TELEX: UNZALU ZA 44370
FAX: +260 211 250 752
EMAIL: unzarec@unza.zm

9. RIGHTS OF RESEARCH PARTTICIPANTS

You may withdraw your consent at any time and discontinue participation without penalty. You are not waiving any legal claims, rights or remedies because of your participation in this research study.

Appendix II: Informed consent to participate

CONSENT FORM

The purpose of the study has been explained to me and I fully understand what is involved. I have volunteered to participate in the study out of my own free will.

Signed: ……..…… Name: ……....…….

(May use participant's right thumb print if unable to sign)

Date: …….

Witness: …… Name: ……..……..……

Date: ……

MWANGO B CHOMBA
UNIVERSITY OF ZAMBIA
SCHOOL OF MEDICINE
DEPARTMENT OF PUBLIC HEALTH
P.O. BOX 50110
LUSAKA
CELL # +260 966 777 393 EMAIL: cmwango@gmail.com

OR

THE CHAIRPERSON
BIOMEDICAL RESEARCH ETHICS COMMITTEE OF UNZA
UNIVERSITY OF ZAMBIA
P.O. BOX 50110
LUSAKA, ZAMBIA
TELEPHONE # +260 211 256 067
TELEGRAMS: UNZA, LUSAKA
TELEX: UNZALU ZA 44370
FAX: +260 211 250 752
EMAIL: unzarec@unza.zm

Appendix III: Informed assent to participate

ASSENT FORM

PROJECT TITLE: DETERMINANTS OF VITAL BIRTH REGISTRATON AMONG MOTHERS IN SELECTED RURAL AND URBAN COMMUNITIES OF THE COPPERBELT PROVINCE, ZAMBIA

INVESTIGATOR: MR.MWANGO B. CHOMBA

I am doing a research study about birth registration in the district. A research study is a way to learn more about people. If you decide that you want to be part of this study, you will be asked to provide details regarding birth registration of your child. This process will take thirty minutes of your time.

All information obtained in the questionnaire will be treated with confidentiality.

Not everyone who takes part in this study will benefit. A benefit means that something good happens to you. I think these benefits might be your awareness on the importance of registering your child.

When I am finished with this study, I will write a report about what was learned. This report will not include your name or that you were in the study.

You do not have to be in this study if you do not want to be. If you decide to stop after we begin or not answer questions that are personal, that's okay too. Your parents/ husband know about the study too.

If you decide you want to be in this study, please sign your name.

I, _____, want to be in this research study.

_____ _____

(Sign your name here) **(Date)**

(May use your right thumb print if unable to sign)

Appendix IV: Questionnaire

QUESTIONNARE

FOR STUDY PARTICIPANTS

Date of interview……. Serial No……...

Name of Health Facility……

1. May I begin the interview?

    1) Yes

    2) No [ ]

If no, stop the interview.

2. Age of respondent (years)……. [ ]

3. Marital status of respondent.

    1) Married

    2) Single

    3) Widowed [ ]

    4) Divorced

    5) Re-married

4. What is your religion?

    1) Muslim

    2) Christian [ ]

    3) Traditional believer

    4) Other, (specify)……..

5. What is your level of education?

    1) No education

    2) Primary [ ]

    3) Secondary

    4) College/ University

6. What is your main occupation?

1) Peasant farmer
2) House wife [ ]
3) Petty trader
4) Business woman
5) Employed
6) Others (specify) ……..

7. What is the occupation of your partner?

1) Peasant
2) Petty trade [ ]
3) Business
4) Employed
5) Others (specify) ……..

8. What is your family income per month?

1) less than K500
2) K500 to K999
3) K1,000 to K1,499
4) K1,500 to K1,999
5) K2,000 to K2,499 [ ]
6) K2,500 to K4,999
7) K5,000 to K9,999
8) More than K10,000

9. Have you ever heard or aware of birth registration?

1) Yes
2) No [ ]

10. If yes, where did you get information?

1) Hospital
2) Colleague
3) Mass Media (Radio, TV, Newspapers) [ ]
4) Others. (Specify).

11. Do you know any institutions dealing with child registration in this area?

1) Yes 2) No [ ]

12. What is the relationship with this child?

1) Mother

2) Caretaker [ ]

13. Sex of child?

01 = Male 02 = Female [ ]

14. How old is this child (Months) …….. [ ]

15. Place of Birth?

1) Hospital

2) Home [ ]

3) Assisted by TBA

4) Others mention…….

16. Has this child been registered?

1) Yes

2) No [ ]

17. If yes, do you have a birth certificate?

1) Yes

2) No [ ]

18. How old was your child at registered his/her birth?

1) Month(s) .

2) Year(s) [ ]

19. What are the reasons for registering a child?

1) Citizenship
2) School enrolment
3) Travel abroad [ ]
4) Notification
5) Others mention…….

20. Why don't other people register their children?

1) Lack Knowledge
2) Not bothered
3) Distance to registration centre [ ]
4) Registration process
5) Others mention……

21. Have you ever registered your older children?

1) Yes
2) No [ ]

.

22. If no, what are the reasons you never register?

1) First child
2) Not bothered
3) Distance to registration centre [ ]
4) Registration process
5) No birth record
6) Others mention ……

23. How good is the service provided during the birth registration process?

1) Very good
2) Good
3) Fair [ ]
4) Poor
5) Very poor
6) Others (Specify)…….

.

24. In your house, who decides for birth registration of the child after birth?

1) Father
2) Mother [ ]
3) Both
4) Others (Specify) ……

25. If you registered this child, what do you consider of cost?

1) Very high
2) Very low [ ]
3) Fair
4) Others (What are they?) ……

26. If you registered this child, what do you consider of waiting time to get services?

1) Too much waiting time
2) Moderate waiting time [ ]
3) Very fast
4) Others (Specify) .

27. If you registered this child, what do you consider of time to get a birth certificate?

1) Very long time
2) Very short time [ ]
3) Moderate time
4) Others (Specify) …….

28. How close are birth registration services from your residence?

1) One kilometer
2) Two kilometers [ ]
3) Three kilometers or more
4) Others (Specify) …….

29. Do you think there are many people aware or informed of the law on birth registration?

1) Yes
2) No [ ]
3) Don't Know

30. Are there any cultural barriers that hinders people from registered birth in your area?

1) Yes

2) No [ ]

If yes what are they?

1) …….

2) ……

3) ……..

31. Are you satisfied with the services of birth registration in your area?

1) Yes

2) No [ ]

If no, what are they?

1) ……

2) ……

3) ……

END

THANKYOU FOR YOUR COOPERATION

Appendix V: Graduate Forum Letter

THE UNIVERSITY OF ZAMBIA

SCHOOL OF MEDICINE

Telephone : +260211252641
Telegram: UNZA, Lusaka
Telex: UNZALU ZA 44370

P.O Box 50110
Lusaka, Zambia

Email: assistantdeanpgmedicine@unza.zm

17th June, 2015

Mr. Mwango B. Chomba
Department of Public Health
School of Medicine
UNZA
LUSAKA

Dear Mr. Chomba,

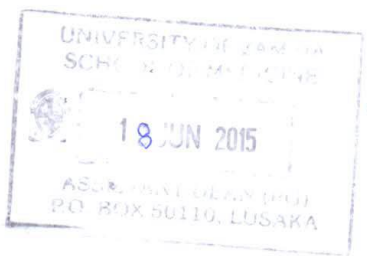
RE: GRADUATE PROPOSAL PRESENTATION FORUM

Following the presentation of your dissertation entitled **"Determinants of Vital Birth Registration Production for Dissemination of Demographic and Health Statistics in Luanshya and Masaiti Districts";** your supervisor has confirmed that the necessary corrections to your research proposal have been done.

You can proceed and present to the Research Ethics.

Yours faithfully,

Dr. S.H. Nzala
ASSISTANT DEAN, POSTGRADUATE
CC: HOD, Public Health



Appendix VI: Ethics Committee Approval

THE UNIVERSITY OF ZAMBIA
BIOMEDICAL RESEARCH ETHICS COMMITTEE

Telephone: 260-1-256067
Telegrams: UNZA, LUSAKA
Telex: UNZALU ZA 44370
Fax: + 260-1-250753
E-mail: unzarec@unza.zm

Ridgeway Campus
P.O. Box 50110
Lusaka, Zambia

Assurance No. FWA00000338
IRB00001131 of IORG0000774

23 November 2015

Our Ref: 014-07-15

Mr Chomba B Mwango
University of Zambia SOM
Department of Public Health
Lusaka

Dear Mr. Chomba

RE: Resubmitted Research Proposal: Determinants of Birth Registration among Mothers in Selected Rural and Urban Communities of the Copperbelt Province, Zambia. (REF. No. 014-07-15)

The above mentioned research proposal which was presented to the Biomedical Research Ethics Committee on 2nd September, 2015 and referred for resubmission has now been approved following your satisfactory response to issues raised by the Committee.

CONDITIONS:

- This approval is based strictly on your submitted proposal. Should there be need for you modify or change the study design or methodology, you will need to seek clearance from the Research Ethics Committee
- If you have need for further clarification, please consult this office. Please note that it is mandatory that you submit a detailed progress report of your study to this Committee every six months and a final copy of your report at the end of the study.
- Any serious adverse events must be reported at once to this Committee.
- Please note that when your approval expires you may need to request for renewal. The request should be accompanied by a progress report (Progress Report Forms can be obtained from the Secretariat)
- Ensure that a final copy of the results is submitted to this Committee.

Yours sincerely,

Dr S H Nzala
VICE CHAIRPERSON.

Date of approval: 23rd November, 2015 **Date of expiry:** 22nd November, 2016

Appendix VII: Luanshya District Medical Office Authorization Letter

REPUBLIC OF ZAMBIA

MINISTRY OF HEALTH

LUANSHYA DISTRICT MEDICAL OFFICE
P O BOX 90170
LUANSHYA

Tel: 512779 Fax: 512900

19th January, 2016

Mr. Chomba Mwango
C/o University of Zambia
LUSAKA

Dear Mr. Mwango

SUBJECT : REQUEST FOR AUTHORITY TO CONDUCT RESEARCH

Reference is made to the above subject

I write to inform you that following the request you made in relation to the research which you intend to conduct at our facilities, am glad to inform you that permission has been granted to conduct your research from the three facilities namely; Newtown, Mikomfwa Health Centre and Section 9 Clinic.

Your data collection will be restricted to birth registration just as per your request. You are requested to see the Centre In-Charge at any of the mentioned facilities before commencement of your exercise.

Yours faithfully,

DISTRICT HEALTH OFFICE

MINISTRY OF HEALTH
19 JAN 2016
HUMAN RESOURCE OFFICER
P.O. BOX 90170
LUANSHYA

Joseph Mwaba
HUMAN RESOURCE MANAGEMENT OFFICER

Appendix VIII: Masaiti District Medical Office Authorization Letter

All Correspondence should be addressed to
The District Medical Officer
Tel/Fax: 0212 760042

MINISTRY OF HEALTH
MASAITI DISTRICT HEALTH OFFICE
P.O. Box 42, MASAITI

DHO/MAS/RESEARCH/68

20th January, 2016

Mr. Chomba B. Mwango
University of Zambia School of Medicine
Department of Public Health
LUSAKA

Dear Madam

RE: REQUEST TO CARRY A RESEARCH IN OUR INSTITUTION

Reference is made to the above captioned subject.

I am pleased to inform you that your request to carry out a research in our Department has been accepted. However, you will not be allowed to collect data on any patients or information relating to patients without the consent of this office unless you get the ethics approval.

The period of your research is from 25th to January to 12th February 2016, a period of three (3) weeks.

However, you are not allowed to depart from your study objectives such as collecting data on any patients or information relating to patients without the consent of this office.

You are further requested to make available your study findings to the District Medical Officer. By copy of this letter the Health Centre Incharges are hereby informed.

Yours faithfully

MINISTRY OF HEALTH
MASAITI DISTRICT HEALTH OFFICE
25 JAN 2016
HUMAN RESOURCES MGT. OFFICER
P.O. BOX 42 MASAITI

Mr Elucky Mwewa
A/G HUMAN RESOURCES MANAGEMENT OFFICER
for/DISTRICT MEDICAL OFFICER

cc. Health Centre In Charge – Masaiti Boma RHC
cc. Health Centre In Charge – Masaiti Council RHC

Appendix XII: Informed consent to participate (Bemba Version)

CONSENT FORM

Umulandu we sambililo naulodololwa kabili nintesha nafyonse ifilomo. Eico, ninjipelasha ukuibimbamo muli ili sambililo ukwabula ukupatikishiwa.

Kuti mwasaina: ..... Ishina: .....

(fwatikeni ku cikumo ca kukulyo ngatamulemba)

Ubushiku: .....

Kambone:..... Ishina: .....

Ubushiku: .....

BA MWANGO B. CHOMBA
UNIVERSITY OF ZAMBIA
SCHOOL OF MEDICINE
DEPARTMENT OF PUBLIC HEALTH
P.O. BOX 50110
LUSAKA.
CELL # +260 966 777 393
EMAIL: cmwango@gmail.com

NANGU

BA CHAIRPERSON

BIOMEDICAL RESEARCH ETHICS COMMITTEE OF UNZA

UNIVERSITY OF ZAMBIA

P.O. BOX 50110

LUSAKA, ZAMBIA

TELEPHONE # +260 211 256 067

TELEGRAMS: UNZA, LUSAKA

TELEX: UNZALU ZA 44370

FAX: +260 211 250 752

EMAIL: unzarec@unza.zm

Appendix XIII: Informed assent to participate (Bemba Version)

UMUTWE WA MULIMO: UKULEMBESHA ABANA KUFYALWA KULI BANA CHIFYASHI MU CIPUTULWA CA LUANSHYA NA MASAITI.

KAFWAILISHA: BA MWANGO B. CHOMBA

Isambililo lyandi lyakufwailikisha palwa kulembesha kwabana bafyalikwa mufiputulwa fya citungu. Uku kufwailikisha kwiminine fye pa Bantu. Ngakuti mwabulamo ulubali muli uyu mulimo, mwaipushiwa ukupela ifishinka palwakulembesha umwana kwenu. Ici calaposafye citika wansa imo wanshita yenu.

Fintu mwalayasuka fyalasungwa munkama te onse uwalasendamo ulubali muli uyu mulimo alasangamo ubukumu. Ubukumu bwaspilibula ubunonshi kuli imwe, leelo ubukumu bulimo bwishibilo mwingakwata pabukankala bwaba mukulembesha abana ilyo bafyalwa.

Ilyo nkapwisha isambililo lyakufwailikisha palwakulembesha abana ilyo bafyalwa, nkalemba ifikatumbukamo leelo tafyakalange ishina lyenu nangufintu mwali munshita yesambililo.

Tekwesha ukuba muli ili sambililo naga tamulefwaya kabili ngamwasalapo ukuleka ilyo natutampa atemwa ukukana yasuka amepusho ayapelwenu naco cilifye. Abafyashi/abalume balingile ukwishiba uyu mulimo.

Ngamwasala ukuibimbamo, mukwai leembeni ishina lyenu.

Ine, ... ndefwaya ukuibimba mwisambililo lyakufwailisha.

....

Leembeni ishina (fwatikeni ngatamulemba) ubushiku

Appendix XIV: Information Sheet (Bemba Version)

ILYASHI

UMUTWE WE SAMBILILO: UKULEMBESHA ABANA KUFYALWA KULI BANA CHIFYASHI MU CIPUTULWA CA LUANSHYA NA MASAITI.

Mwaipushiwa ukuibimba mwisabililo lyakufwailisha ilecitwa na ba Mwango B. Chomba abamasabililo ya bachelor of Arts (BA), kabili abamasambililo ya Master of Public Health (MHP) Population Studies pesukulu likalamba ilya University of Zambia. Ili sambalilo lilecitwa mu kufwaya kwamasambililo ya MPH Population Studies. Eico, namusalwa ngabakusendamo ulubali muli uyu mulimo pantu mulibafyashi/bakasunga bamwana ushilacila umushinku pa myaka isano.

UMULANDU WESAMBILILO

Ukufwailikisa kulecitwa mukulola kukulembesha kwabana kufyalwa kubafyashi na bakasunga mu ciputulwa ca Luanshya na Masaiti mu Zambia. Inkama ya uku kufwailisha nipakusenda ilyashi mufyamikalile yabana cifyashi mu fiputulwa ifi fibili. Eico, mwaipushiwa ukuisanshamo pantu muli bekashi bamuli ino ncende itangatwa nacino cipande ca ciputulwa ca bumi. Natwishiba ukuti imwe muli nobwishibilo ubukalamba palwa ino ncende.

1. **IFYAKUCITA**

Nga mwaipelesha ukuibimba mwisambililo, mwaipushiwa ukucita ifi:

(i) Kuti mwafwaya incende, kuti yaba mukati kacikulwa cino atemwa ukomwingatemwa.

(ii) Mwalaikala na kepusha uwakanshiwa elyo mwasuke amepusho pafyo mwaishiba pamulimo wakulembesha ukufyalwa kwamwana ucitwa muno muncende, fintu nshi fingongola nangu ukulesha abafyashi naba kasunga pamo naimwe ukukana lembesha ukufyalwa kwa bana napakulekesha mulande ifingafwaikwa pa kutwala impendwa yakulembesha pa mulu mu citungu cenu.

2. **UBUBI BWINGATUMBUKAMO**

Isambililo talikwete ububi bwingatumbukamo lelo ukana kakulwa mumyasukile yamepusho yamo kuti kwasangwa kabili nenshita mwalaposa pakwasuka amepusho. Nacimbi, abaibimbilemo tabaapatikishiwe ukuleta ilyashi palwalala ilyo bashilefwaya kulanda kabili nabakwata insambu shakuna leta pabwelu ilyashi bashilefwaya ukuba pabwelu.

Nga cakuti basanga ukukana kakulwa, kafwailisha kuti aleka ukubepusha pakuti bengasala amashiwi. Kafwailisha kuti asuula kumepusho ayashilesekesha abaimbilemo kabili ngabatemwa kuti baleka.

3. **UBUSUMA KUBASENDELEMO ULUBALI NA KUCALO**

Isambililo talyalenge ukusekelamo pakuimbimo. Nomba, ilyashi mwaleta lyalakusha ukwishiba palwakulembesha kwakufyalwa kwabana muli cino citungu.

4. **AMALIPILO KUBASENDELEMO ULUBALI**
   Ukuibimba muli ilisambililo tamuli kanyampuku nakalya. Leelo, ukuisanshamo, kwaleta ilyashi ili kafwa abalashiwa no mulimo wakulemba ukufyalwa kwabana mucitungu ilyo balebomba uyu mulimo. Twatatasha pakuposa akashita kenu ulanshanya naifwe.

5. **INKAAMA**
   Ilyashi lyonse ilyasendwa muli ilisambililo lyamunkaama kanofye ngamwasuminisha nangu ukukonka nefude lya calo elyo twingasokolola. Inkaama ikasungwa pelyashi lyasendwa pakulanshanya. Ishina lyenu talyakese pabwelu pantu tukalabomfyafye nambala yenu iyo mukapelwa.

6. **UKUIPELESHA PAKUIMBAMO**
   Kuti mwasala ukuba mwisambililo atemwa iyo. Ukusendamo ulubali kwenu muli ili sambililo pantu pabula amalipilo. Ngamwaipelesha ukuba muli uyumulimo, kuti mwaleka inshita ili yonse mwingafwaya ukwabula ubwafya nelyo bumo. Kabili kuti mwakana ukwasuka ilipusho ilyo mushitemenwe kabili noku konkanyapo isambililo. Kafwailisha kuti amufunya ngakwaba ifyapunfyanya.

7. **ILYASHI NO KULUNGIKA**
   Namwipushiwa ukwipusha ilyo mushumfwile palwa ilisambililo na mepusho yonse yali nokuya kuli;

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8. **INSAMBU PALWAKULANSHANYA**

   Muli abantungwa ukuleka inshita iliyonse apabula ukupingulwa atemwa ukulipilishiwa. Teti mutwalwe kucilye pamulandu wakusangwa muli uyu mulimo.

Appendix XV: Questionnaire (Bemba Version)

IFIPUSHO

KUBAIMBILEMO MWISAMBILILO

Ubushiku bwa mepusho..... Nambala.....

Ishina lya ciputulwa cabumi.....

1. Bushe kuti nayamba amepusho?
   1) Ee [ ]
   2) Iyo

   Ngabakana, kuti mwaleka ukwipusha.

2. Umushinku wakwa kasuka (imyaka).....
3. Umubele wakwa kasuka
   1) Alyupwa atemwa alyupa
   2) Mushimbe atemwa nkungulume [ ]
   3) Alifwilwa
   4) Balikana mucupo
   5) Alyupwa nangu alyupa nakabili
4. Bushe cilonganino ca mapepo nshi mwabamo?
   1) Muslim
   2) Kristian
   3) Mumipepele ya cikaya [ ]
   4) Ifyashala, (lumbuleni).....
5. Mwapwishishe imyakashinga pasukulu ukufuma apomwayambile isukulu?
   1) Nshya ku skulu
   2) Ku Primary
   3) Ku Secondary
   4) Ku College/ University [ ]

6. Mubomba ncito nshi?
   1) Shibulimi/nabulimi munono
   2) Umukashi wapang'anda fye
   3) Namakwebo munono [ ]
   4) Amakwebo
   5) Balinjingisha inchito
   6) Ifyashala (lumbuleni).....
7. Ngabena mwenu babomba ncitonshi?

1) Shibulimi/nabulimi munono
2) Namakwebo munono
3) Amakwebo
4) Balinjingisha inchito
5) Ifyashala (lumbuleni).....

8. Bushe ulupwa lukwata shinga pa mwenshi?
   1) Taifika K500
   2) K500 to K999
   3) K1,000 to K1,499
   4) K1,500 to K1,999
   5) K2,000 to K2,499 [ ]
   6) K2,500 to K4,999
   7) K5,000 to K9,999
   8) Ukuchila pali K10,000
9. Bushe mwalyumfwapo atemwa ukwishiba palwakulembesha abana kufyalwa?
   1) Ee
   2) Iyo [ ]
10. Ngamwasumina, nikwi mwapokele ili lyashi?
   1) Kucipatala
   2) Kubanandi
   3) Kumulabasa (icilimba, amapepala yelyashi) [ ]
   4) Fimbi (lumbuleni).....
11. Bushe mwalishiba iciputwa icibomba umulimo wakulembesha abana muno muncende?
   1) Ee
   2) Iyo [ ]
12. Uyumwana mulinankwe shani?
   1) Nyina
   2) Kasunga [ ]
13. Umubele wamwana
   1) Mwaume
   2) Mwanakashi [ ]
14. Umushinku wamwana (imyenshi).....
15. Uko afyalilwe
   1) Kucipatala
   2) Banacimbusa balinjafwile
   3) Fimbi (lumbuleni)..... [ ]
16. Bushe umwana alilembeshiwa?
   1) Ee
   2) Iyo [ ]
17. Ngamwasumina bushe mwalikwata icipepa alembeshiwepo?
   1) Ee
   2) Iyo [ ]

18. Akulile shani ilyo mwamulembeshe?
    1) Imyenshi
    2) Imyaka [ ]
19. Chinshi calengele ukuti mulembeshe umwana?
    1) Ubwine ikalacalo
    2) Ukulembesha isukulu
    3) Imyendele ku fyalo fimbi [ ]
    4) Ukwishibisha ubuteko
    5) Fimbi (lembuleni).....
20. Bushe cinshi cilenga bambi ukukana lembesha abana?
    1) Nsha umfwapo
    2) Nsha poseleko amano [ ]
    3) Imilembeseshe
    4) Fimbi (lembuleni).....
21. Bushe mwalitala lembesha abana benu abakalamba?
    1) Ee
    2) Iyo [ ]
22. Ngamwakana,cinshicalengele ukukanabalembesha?
    1) Mwana wakubalilapo
    2) Nsha poseleko amano
    3) Ubutali ukwa ku lembesha [ ]
    4) Imilembeseshe
    5) Nshakwata icipepa ica ku cipatala
    6) Fimbi (lembuleni).....
23. Mutangatwa shani kuli ifi fiputulwa filemba abana?
    1) Bwino-bwino
    2) Bwino panono
    3) Tababab wino [ ]
    4) Tababa bwino sana
    5) Inshishibe
    6) Fimbi (lembuleni).....
24. Pamwenu nibani abapingula ukulembesha kwabana?
    1) Ba wishi
    2) Ba nyina [ ]
    3) Bonse babili
    4) Bambi (lumbuleni)
25. Ngamwalembesha uyu mwana, mulecekela umutengo ukuba shani?
    1) Pamulu sana
    2) Panshi sana
    3) Pakati [ ]
    4) Fimbi (finshi) .....

26. Pakulembesha uyu mwana mulecetekela ukuposa inshita nshi pakumutangata?
    1) Ukulolela nshita ntali
    2) Inshita iyalinga
    3) Fikacika bwangu sana
    4) Fimbi (lumbuleni) [ ]
27. Ngamwalembesha umwana mulecetekela ukupoka icipepa camwana panshita
    1) Ntali sana
    2) Iipi
    3) Iyalinga [ ]
    4) Fimbi (lumbuleni).....
28. Bushe ukwakulembesesha kwalepa shani ukufuma pantu mwikalila?
    1) Umulundu umo
    2) Imilundu ibili
    3) Imilundu itatu nangu ukuchilapo [ ]
    4) Fimbi (lumbuleni).....
29. Mukumona kwenu bushe abantu balikwatapo ubwishibilo palwakulembesha abana ilyo bafyalwa?
    1) Ee
    2) Iyo
    3) Nshishibe [ ]
30. Bushe kuli intambi shimo ishilesha abantu ukulembesha abana muli ino ncende?
    1) Ee
    2) Iyo [ ]

    Ngamwasumina nintambi nshi?
    1) .....
    2) .....
    3) .....
31. Bushe mwalisekelamo mumulimo walembesha ukufyalwa kwabana muncende yenu?
    1) Ee
    2) Iyo [ ]

    Ngamwakana ninshi?
    1) .....
    2) .....
    3) .....

EMPELA
TWATOTELA