Cultural Competence in Childbirth in Multicultural Ecuador: Lessons for Evaluation

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Dedication

I wish to dedicate this dissertation to the Shuar women who shared their knowledge about their childbirth traditions with me while I was pregnant with my daughter, Emma. Also, in gratitude to my family, in particular to Juan Carlos, Gina and Susana. Thank you for all your patience, love and support.

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Abstract of Dissertation

Cultural Competence in Childbirth in Multicultural Ecuador: Lessons for Evaluation

Despite Ecuador's increased public health spending and improvement in health outcomes, the Maternal Mortality Rate (MMR) in the country is high and has been increasing in tendency in the past decade. Furthermore, there is a clear gap in the proportions of institutional births between indigenous and non-indigenous women. Given the implementation of culturally adequate childbirth services in public hospitals in Ecuador, which occurred mostly after the Ministry of Public Health published technical guidelines for the cultural adaptation of childbirth services in 2008, this dissertation sought to assess the extent to which the availability of culturally adequate childbirth services affects the proportion of institutional deliveries and maternal mortality rates. After reviewing the main theoretical frameworks regarding the importance of culture in access to health care, this dissertation used a mixed-methods approach to analyze the determinants of institutional deliveries, and the effects of culturally adequate services on maternal health outcomes. In addition, this dissertation builds on the experience evaluating the impact of cultural competence in childbirth services to reflect on the need for culturally responsive intercultural evaluation.

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Chapter 1: Introduction

Routine childbirth procedures often ignore traditional and indigenous perspectives. In general, the effectiveness of baby delivery procedures is conceptualized and measured through the accomplishment of routine standards, which are often treated by public authorities as incontestable. Taking into account that Ecuador is a plurinational and multiethnic country with 14 indigenous nationalities and 18 indigenous peoples (*pueblos*), a major puzzle remains on whether there is a cultural gap in the widely accepted medical childbirth practices, and to what extent culturally adequate services can improve birth outcomes. The issue about cultural adequacy is even more pronounced when traditional/indigenous practices differ significantly from the routine procedures that are promoted by health authorities. Since Ecuador began implementing culturally adequate childbirth services (often referred as intercultural childbirth services) in public health facilities in the past decade (which includes the choice of the position during labor; the accompanying of family members, midwives or traditional healers during labor; and culturally adequate food, beverages, and clothing; among others), a central question to address is: to what extent do culturally adequate childbirth services improve maternal and infant health outcomes? In addition, it is important to increase our understanding of key determinants of access to institutional delivery and to identify deficiencies in how culturally adequate childbirth practices are evaluated. Lastly, this dissertation also recognizes and reflects upon the need to explore how evaluation could be tailored to incorporate indigenous views of determining merit, worth and validity.

This chapter introduces the background and rationale for the research, followed by a brief description of previous studies and their deficiencies. Lastly, this chapter describes the main research questions, the purpose of the study and provides an outline of the next sections of this dissertation.

Background and Rationale for the Research

Childbirth by skilled professionals

In 2013 approximately 289,000 women died while pregnant or giving birth and 3 million newborns die in the neonatal period (World Health Organization, 2014). The World Health Organization (WHO) explains that maternal mortality is a largely preventable cause of death that is still a major issue in the developing world. For instance, the main causes of maternal maternity are pre –existing conditions (28%), severe bleeding (27%), pregnancy induced high blood pressure (14%), and infections (11%; WHO, 2014). Moreover, WHO advocates for ensuring quality maternity care services and "skilled care at every birth". The reason behind this is the fact that the highest incidence of maternal and perinatal mortality occurs around the time of birth with the majority of deaths occurring within the first 24 hours after birth (WHO, 2014b). Moreover, the WHO explains that "up to two thirds of newborn deaths can be prevented if known, effective health measures are provided at birth and during the first week of life"(WHO, 2012). Thus, as the WHO indicates, ensuring quality maternity care by skilled professionals can save the lives of women and newborns. Even though the proportion of childbirths by skilled professionals in Latin America and the Caribbean has improved, and was on average 93% between 2009 and 2013 (UNICEF, 2014), there is a systematic gap in institutional childbirth between the indigenous and the non-indigenous population. The Economic Commission of Latin America and the Caribbean (ECLAC) indicates that the countries with the highest gap in baby delivery by skilled professionals between indigenous and non-indigenous populations are Peru (80%), Guatemala (70%), and Ecuador (60%) (ECLAC, 2010, p. 30).

Health practices have evolved throughout the centuries, changing perceptions of what is, or ought to be, 'a good health service'. For instance, the World Health Organization indicates that with the widespread institutionalization of childbirth since the 1930s, the option of a home birth in most developed countries disappeared (WHO, 1996, p.11). Therefore, countries have established standards and routine practices for health services, and there is even a universal practical guide for

care in normal birth prepared by the WHO (1996). While much progress has been made in building knowledge about what works in certain health practices, the application of routine procedures across different countries and cultures has become common practice. Increasing proportions of people living in urban areas have led to more women delivering in obstetric facilities, whether they have normal or complicated births. The WHO indicates that "there is a temptation to treat all births routinely with the same high level of intervention required by those who experience complications. This, unfortunately, has a wide range of negative effects, some of them with serious implications" (WHO, 1996, p. 2).

The Ecuadorian Context

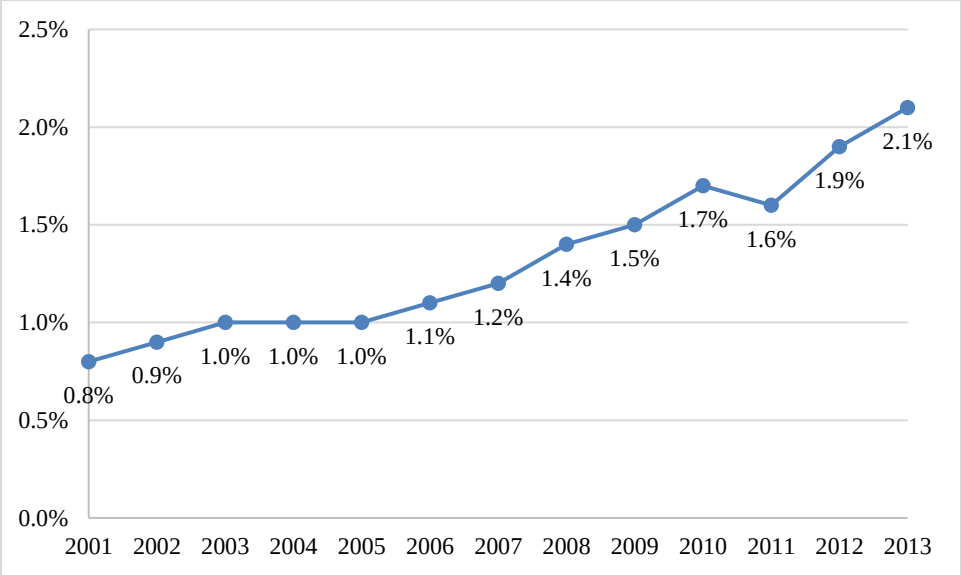
Ecuador is an upper-middle-income country according to the World Bank income classification of countries. The country is located in South America; its population is ethnically diverse and amounts to approximately 16.2 million people (according to INEC population projections for 2015). According to the Development Council of Ecuadorian Nationalities and Peoples (CODENPE), there are 14 distinct indigenous nationalities and 18 indigenous peoples (*pueblos)*. The indigenous nationalities and *pueblos* have diverse beliefs, customs, traditions, spoken-languages and world views.

Public Health spending in Ecuador has increased during the past decade and even at a larger rate during the past few years. For instance, in 2013 Public Health spending was 2,425 million USD, which is approximately eight times the amount spent 10 years before (Ministerio de Salud Pública de Ecuador- MSP, 2013, p.3). Furthermore, public health as a percentage of Ecuador's Gross Domestic Product has doubled in the past decade (see Figure 1.1).

In its commitment to improve the Ecuadorian population's health status, Ecuador has also made some important reforms targeting especially vulnerable segments of the population. The Free Maternity and Child Health Care Law (or LMGYAI – its acronym in Spanish) was approved by Congress in 1994. Yet, it did not have a significant impact in the country until several reforms, that aimed to strengthen its implementation and budget allocation, were approved in 2000 (Hermida et

al., 2005 , p. 1). LMGYAI guaranteed free prenatal and childbirth services. The law aimed to reduce maternal and infant mortality, increase access to quality health care, and increase citizen participation in decision making and quality control.

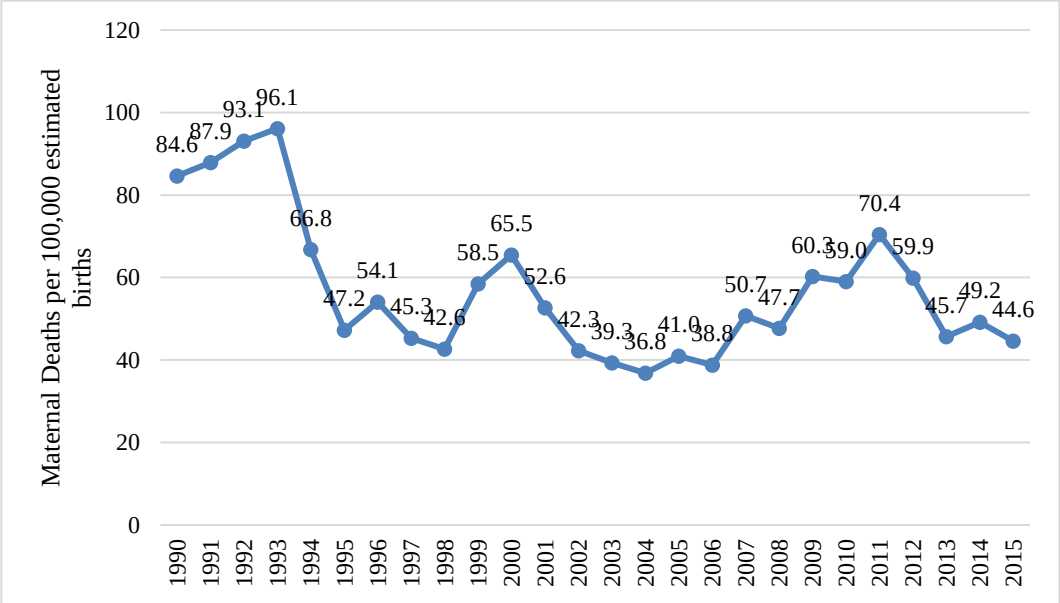
Figure 1.1: Public Health Spending as a % of GDP 2001-2013



Source: SIISE 2014

Although Ecuador has increased its public health spending and made significant progress in improving health outcomes, the country's Maternal Mortality Rate (MMR) is still too high and has shown an increasing trend in the past decade. According to the National Institute of Statistics and Census (INEC), and as shown in Figure 1.2, MMR has increased from 42.3 to 70.4 per 100,000 live births in the 2002-2011 period. Furthermore, Ecuador's MMR is a comparably high rate (45.7 in 2013) considering that the MMR in developed countries in 2013 was 16 per 100,000 births (World Health Organization, 2014).

Figure 1.2: Maternal Mortality Rate in Ecuador 1990-2015



Source: INEC 2013

Improving maternal health is one of the Millennium Development Goals (MDGs) adopted by the international community in 2000, and is also one of the targets of the Sustainable Development Goals (SDGs). Under MDG5, countries committed to reduce maternal mortality by three quarters between 1990 and 2015 (WHO, 2014). According to Ecuador's MDG report (UNDP, SENPLADES, & CISMIL, 2007), the country's mortality rate in 1990 was 117 maternal deaths per 100,000 live births[1]. Thus, in order to reach the MDG5 target, Ecuador would have had to reduce its MMR to 29 per 100,000 live births by the end of 2015[2] (UNDP, SENPLADES, & CISMIL, 2007, p.18).

Institutional and skilled care childbirth gap by ethnic groups

There is a clear gap in institutional and professionally assisted childbirth across different ethnic groups in Ecuador, which raises the question of whether culture has an effect on health outcomes

[1] The way MMR is measured in Ecuador was changed in 2014 in order to homologate the indicator with the International Statistical Classification of Diseases and Related Health Problems (ICD-10, volume 2, p. 148-149). The difference is in the denominator: the MMR shown in Figure 1.2 (which is the new definition) is defined as the number of maternal deaths (deaths occurring during 42 days after giving birth) per 100,000 estimated live births. The old definition included late birth registrations in the denominator.

[2] A three quarters reduction for the Maternal Mortality Rate's new measurement would have meant reaching a MMR of 21 deaths per estimated live births by 2015.

(this is discussed in detail in Chapter 2). For instance, while in 2006 90.1% of mestizo (mixed race) and white women delivered their babies with the assistance of a skilled professional, only 37.9% of indigenous women gave birth with assistance of a skilled professional (ECV 2006 in SIISE). The difference in the percentage of institutional deliveries is also striking: in 2006, 89% of white or mestizo women compared to 36% of indigenous women gave birth at either a public or private health facility. Furthermore, when disaggregating the indicator by provinces with high proportions of indigenous populations, the percentage of childbirths that do not occur at public nor private health care institutions is disproportionately high. For instance, in Morona Santiago, which is an Amazon province with 42% of Shuar indigenous population (INEC Census, 2010), 69% of births did not occur at private/public health institutions (ECV, 2006).

Interculturalism in Health

There has been growing interest in the relationship between culture and health in reproductive health and child delivery in Latin America in the past two decades. Culture can be defined as "a body of beliefs and customs that define a group of people as being connected and that determines their identity" (Lavizzo-Mourey & MacKenzie, 1996, p. 226). Since the late 1990s and the early 2000s the concept and application of intercultural health in Latin America has gained prominence and has been legitimized by several milestones. For instance, the Pan-American Health Organization (PAHO) has given new priorities to initiatives involving indigenous populations and UNESCO has recognized several indigenous practices as intangible Cultural Heritage of Humanity. In addition, there has been specific recognition of public health policies involving competence in intercultural health practices within laws and constitutions of some Latin American Countries (Bolivia and Ecuador), and there are various examples of intercultural health programs implemented in Mexico, Nicaragua, Peru, Bolivia, Ecuador and Chile (Fernández Juárez, 2010).

More recently, in November 2009, the Ecuadorian Ministry of Public Health (MSP), the United Nations Population Fund (UNFPA), the Andean Organism of Health (ORASCONHU), Celade/CEPAL, and Family CARE International (FCI), along with support from the Spanish

Cooperation Agency (AECID), organized a Seminar/Workshop on "Interculturalism and exercise of rights in the Andean subregion with emphasis in sexual and reproductive health." This seminar was organized using the MDGs and the need to reduce maternal mortality as a main framework, and gave emphasis to the importance of cultural aspects in facilitating access to universal health care services (Fernández Juárez, 2010). As a product of the seminar, the "Declaracion de Quito" on November 13, 2009, summarized the main conclusions and compromises of the participants. Among the most important points, the Quito Declaration recommends implementing an intercultural focus within public health initiatives in Andean countries, with special emphasis on sexual and reproductive health. As Fernandez Juarez (2010) explains, the incorporation of an intercultural view within public health initiatives has the potential to reduce disparities in access to health services.

Ecuadorian Maternal Health Policies

One of the main important legislations in maternal health in Ecuador was the 1994 Law of Free Maternal and Infant Health (LMGYAI) which was reformed in 1998, and subsequently diminished with the 2014 Monetary and Financial Organic Code law[3]. LMGYAI has been considered a milestone for maternal health since it entitled all Ecuadorian women to free maternal care in public health institutions which were funded by a special entitlement budget from a portion of special consumption taxes, and was implemented by an autonomous executing agency. LMGYAI also encouraged citizen participation and oversight through 'patients committees'. LMGYAI was also important in terms of intercultural maternal health care since article 2 allowed for the participation of traditional medicine practitioners as maternal health providers if they obtained previous certification from MSP (González, 2011). Nevertheless, the incorporation of traditional midwives as maternal health care providers had implementation problems rooted in the certification process

[3] The 2014 Monetary and Financial Organic repealed the entitlement of the LMGYAI's budget mechanism as a separate entity with financial autonomy, since the 2008 Constitution guarantees universal access to health care to every person.

(there were no pre-defined certification mechanisms for traditional healers or midwives).

Other important policies related to maternal health care are: the 1999 Norms and Procedures for Reproductive Health Services, the 2005 Maternal Mortality Reduction Plan, the 2008 Constitution (in which every Ecuadorian resident is entitled to universal health care) and the 2008 Plan for Accelerated Reduction of Maternal and Neonatal Mortality. Although the 1999 Norms and Procedures for Reproductive Health Services enumerate some practices, such as family accompanying and vertical position during labor, they were not described in positive nor negative terms, and were not labeled as 'culturally adequate' nor as intercultural health services (González, 2011). In addition, the 1999 norms do mention vertical position as an option during childbirth, and recognize the need to have adequate infrastructure and equipment to be able to offer this type of service. Yet, there were no operational/implementation guidelines for medical personnel to follow and to be able to provide those services (González, 2011). This situation changed with the Ministry of Public Health (MSP) 2008 guidebook with Technical Guidelines for Culturally Adequate Childbirth Services, the 2011 Methodological Guidelines for Culturally Adequate Childbirth, and the 2014 Specifications Guidelines for Partum and Post-Partum Working Units (UTPRs), which are the main focus of this dissertation.

In 2008, the Ecuadorian Ministry of Public Health (MSP –for its acronym in Spanish) published a guidebook with specific technical guidelines for culturally adequate child delivery services. The document argues that the provision of culturally adequate childbirth services allows to erase some of the barriers that prevent some pregnant women to deliver their babies at the hospital (Ministerio de Salud Pública del Ecuador, 2008). In addition, in the same year, the MSP begins the implementation of a culturally adequate policy of unrestricted baby delivery position (PLCPCPI). By 2015, 59 public health operating units/facilities (basic hospitals and type C health units) were reported as equipped to service culturally adequate child deliveries (MSP -Ministerio de Salud Pública del Ecuador, 2015). Since the adaptation of infrastructure or equipment for culturally adequate childbirth services did not take place uniformly nor simultaneously across public health

centers in different provinces, this dissertation analyzes whether the availability of public medical facilities with culturally adequate childbirth services affect maternal health outcomes.

Thus, given the significant gaps in births attended by skilled health professionals, there is a need for research that investigates the determinants of access to institutional deliveries. In addition, given the recognition of the importance of culture in the choice of institutional delivery and the right of pregnant women to choose a culturally adequate birthing position, it is important to assess whether the implementation of culturally adequate childbirth services in public hospitals and facilities has increased access to institutional delivery, improved perception of the quality of health care among indigenous women, and decreased maternal and infant mortality rates.

Previous Studies and Gaps in the Literature

Health facility (institutional) delivery is encouraged as one of the most important strategies in preventing maternal and neonatal morbidity and mortality, therefore it is important to understand the factors that are associated with it. There are a number of papers that examine the importance of culture in accessing health services which differ in the framing of their questions, design, methods, data sources, geographic focus, and limitations. Nevertheless, there appears to be an agreement regarding the importance of culture and perceptions of quality in accessing skilled care for childbirth. The literature reviewed indicates that there is a considerable amount of evidence that suggests culture has an influence on healthcare access and outcomes through several mechanisms, such as those detailed by Thaddeus and Maine's (1994) "Three Delays" framework. Also, several studies coincide on viewing maternal mortality as an event that occurs as a result of the interplay of social, environmental, cultural, and medical factors. Furthermore, there is vast literature on cultural competence in healthcare which provides a theoretical grounding and motivation for this dissertation's research on cultural competence.

The key findings of various recent studies (Ebuehi and Akintujoye 2012, Sychareun et al. 2012, Evans 2013, Exavery 2014,) suggest that cultural beliefs, customs, and values influence and play

an important role on women's behaviors during the perinatal period and often have an effect on the likelihood of maternal death in childbirth. In addition, Gabrysch et al.'s (2009) analysis of the effects of cultural adaptation of birthing services in Ayacucho, Peru, provides important insights about what could be expected of a similar analysis in Ecuador. The study indicates that after the new culturally adapted vertical delivery model was available, it was chosen by most women, there was an improvement of women's perception of the quality of services, and there was also an increase in the percent of institutional deliveries in the area (Gabrysch et al., 2009). Nevertheless, these were mainly non-experimental observational studies and/or qualitative studies with several threats to internal and external validity. Thus, there is only relatively weak or anecdotal evidence about the effects of culture on maternal mortality and on the choice of institutional/home deliveries. Therefore, although there seems to be a considerable amount of evidence that supports the claim that "Culture has a direct and profound influence on the behavior of mothers and their care-givers during pregnancy […] there is a lack of research about the direct effect of culture in maternal mortality" (Thaddeus & Maine 1994; Kyomuhendo 2003; Geller et al. 2006; Gil-Gonzalez et al. 2006; Piane 2009; Sibley et al. 2009; in Evans 2013, p. 491).

Systematic reviews of the literature have also been the basis for the creation of new conceptual frameworks or theories regarding the relationship between culture and maternal health outcomes. For instance, Thaddeus and Maine's (1994) review of the role of culture in maternal mortality through inaction was the basis for the development of the conceptual framework of 'three delays', which explained the three phases in which women could potentially be prevented from access to maternal care: delay in the decision to seek care, in reaching care, and in receiving care. In addition, Evans's (2013) systematic review of cultural influence on maternal mortality in the developing world argues that four ways in which culture may affect maternal mortality are: directly harmful acts, inaction, use of care, and social status. Evans's review makes reference to Thaddeus and Maine's conceptual framework of the 'three delays' and argues that culture affects the first of these delays – women's decision to seek care. Evans' review also indicates that most primary research

studies are mainly qualitative and provide detailed descriptions of culture surrounding baby delivery in various communities. Yet, these studies rarely make a connection between cultural practices and maternal mortality (Evans, 2013). Therefore, the purpose of this dissertation is to fill in this gap by assessing how the availability of culturally adequate services following Ecuador's 2008 guidelines for culturally adequate child delivery services have affected maternal and child health outcomes and access to care.

Having established the importance of assessing the relationship between culture and maternal and child health outcomes, it is also worth noting the literature that explains the need to consider culture in evaluation (Kirkhart 2005, Hopson 2009, Mertens 2011, and Symonette 2004, among others). Chouinard and Cousin's (2009) systematic review of 52 empirical studies, from 1991-2008, illustrates the growing interest in the topic, and suggests an agenda for future research. The available literature on Culturally Responsive Evaluation (CRE), Multicultural Validity, and Indigenous Evaluation Framework has increased in the past decade. Nevertheless, the applicability of these frameworks to ethnically diverse Latin-American countries has been scarce. Therefore, this dissertation also builds on the assessment of cultural competence in child delivery services to reflect on the need for culturally responsive intercultural evaluation.

Purpose and Research Questions

Given the high maternal mortality in Ecuador and its multicultural context, the scarce research about the direct effects of culture in maternal mortality, and the need for culturally responsive evaluation that can be tailored to better assess the effects of culturally adequate health services in a multicultural context, there are some important questions that need to be addressed. This dissertation addresses the following questions using a mixed methods approach:

1. To what extent does the availability of culturally adequate childbirth services affect access to healthcare and health outcomes in Ecuador?

a) What are the main factors associated with the choice of institutional delivery in a multicultural

developing country like Ecuador?

b) To what extent does the availability of culturally adequate childbirth services improve: the proportion of institutional deliveries, health outcomes (maternal mortality rates) and perceptions of health care in Ecuador?

Through addressing these research questions, the purpose of this dissertation is to determine the extent to which culturally adequate childbirth practices improve maternal and infant health outcomes, understand the determinants of access to skilled care and institutional delivery, and advance understanding on how program evaluation might be tailored to better understand the mechanisms behind childbirth services in an ethnically diverse context.

This dissertation is divided in six parts. After the introduction to the dissertation topic and the description of the research problem presented in this chapter, the second chapter provides an overview of theories and previous studies about culturally adequate child delivery practices and their relationship with birth outcomes. Next, the third chapter of this dissertation presents the methodology used to study the main factors that influence health-facility childbirth in Ecuador, the extent to which culturally adequate childbirth practices improve health outcomes, and potential limitations of the study. The fourth and fifth chapters describe the results of the quantitative and qualitative components that were employed to address the two research questions. Lastly, the sixth chapter presents the study's main conclusions and a refection about the importance of considering multicultural validity and culturally responsive evaluation within the context of this dissertation.

Chapter 2: Supporting Theories and Literature

This chapter provides an overview of the theory and relevant research about how culture can influence health access and health outcomes, culturally adequate child delivery practices and their relationship with birth outcomes, and different theoretical approaches related to cultural competence in program evaluation. First, this chapter provides a brief review of research on the influence of culture on health care, followed by an overview of the literature about cultural competence in health care. Second, this chapter reviews research that addresses the relationship between culture (and cultural competent services) and maternal and child health outcomes, and briefly reviews the literature on determinants of maternal mortality. Lastly, this chapter provides an overview of the main limitations in previous empirical studies.

The Influence of Culture on Health Care

Although health practices and traditions are varied across the world, routinized and standardized health practices often overlook traditional health practices and preferences regarding health services. Among other authors that have explored this topic, in *The Birth of the Clinic,* Foucault coined the term "medical gaze" to represent the dehumanizing medical separation of the patient's body from the patient's identity. Foucault's book explains that in the late 18th and early 19th centuries there was a shift in the way diseases and illnesses were formulated and treated (Rendell, 2004). Foucault explains that the classificatory medical rule in which a disease would not be treated without 'first being sure of its species', was replaced, from the nineteenth century onwards, by a medical theory and practice based around the 'seen' and the 'spoken', the 'perceptible, and the 'statable' (Foucault, 1972 in Rendell, 2004). Foucault argued that the introduction of pathological anatomy and the reorganization of the hospitals/clinics into places of observation and learning (in addition to healing) led to the predominance and "sovereignty of the gaze" in modern medical experience (Rendell, 2004, p. 35). This has important implications since, as Foucault argued, in the

modern clinical experience (which is under the scrutiny of 'the gaze' or under the observation of the 'eye that knows and decides') the patient becomes the passive and silent object of knowledge (Rendell, 2004, p. 36). In this way, modern medicine often fails to recognize the importance of culture in health practices.

As an opposing view to the predominant structure of how doctors relate to their patients (separating the patient's body from the patient's identity), various authors argue that it is important to learn about and understand people from diverse cultures, rather than requiring them to assimilate to conventional health practices (Wilson, 2012, p. 10). Although culture is a complex and elusive concept and there is no consensus about how to define it, Lavizzo-Mourey and MacKenzie (1996) provide a very useful definition of culture and argue that health care systems can be regarded as cultural constructs:

> "Culture is a body of beliefs and customs that define a group of people as being connected and that determines their identity. To a large degree, health care systems are cultural constructs, and beliefs about health and disease are culturally determined" (Lavizzo-Mourey & MacKenzie, 1996, p. 226).

The marked disparities in health outcomes across different population groups within the same countries - such as the ethnic and racial disparities evidenced in the Institute of Medicine's (IOM*)* *Unequal treatment: Confronting racial and ethnic disparities in healthcare* 2003 report (Nelson, Stith, & Smedley, 2003)- have propelled researchers' interest in uncovering the factors associated with these disparities, and also better understanding the role of culture and cultural competence in the disparities of health outcomes. The causes of ethnic disparities in health outcomes are complex, involve many participants at different levels, and are rooted in both historic and contemporary inequalities (Anderson et al., 2003 citing the IOM 2003 report), thus studies on the topic are varied and focus on different aspects of the problems.

Several studies have shown that culture has an influence on health outcomes through several mechanisms, such as the different perceptions of what "health" or "illness" actually mean, the differing degrees of skepticism about professional medical care (Suchman, 1965), and the

influence of differing levels of acculturation, among others (Anderson et al. 2003). For instance, with respect to the different perceptions about what 'health' and 'illness' mean, Zaborowski's (1952) study explained that sensitivity to pain and attributing significance to pain symptoms varies by ethnicity and culture. As Camacho, Castro and Kaufman (2006) explain, the socio-cultural context informs the members of its society about certain ideal standards of the body, physical and mental well-being, and beliefs associated with certain diseases, so people experience disease and misfortunes in different ways and avoid risk using different methods (e.g. religion, traditional medicine, biomedicine). Regarding acculturation, there are some studies (e.g. Burnam et al. 1987) that indicate that acculturation level accounts for differences in the use of health services within ethnic groups after controlling for age, gender, health status, and insurance coverage (Anderson, Scrimshaw, Fullilove, Fielding, & Normand, 2003). So, there is a considerable amount of literature that concludes that culture and ethnicity do have an effect on health care access and outcomes.

The effects of language barriers and racial prejudice are also among the mechanisms assessed by the studies assessing disparities in health outcomes. The quality of care can be compromised when clients do not understand what their healthcare providers are indicating, and/or providers either do not speak the patient's language or are insensitive to cultural differences. For instance, Timmins' (2002) systematic review focuses on the effects of language barriers in health care for Latino populations in the U.S. Some of the main findings were that more than half of the studies examining access to care found a significant adverse effect of language and more than 80% of the reviewed studies that evaluated quality of care found a significant negative effect of language barriers. In addition some studies found that non-English-speaking status was an indicator of a population at risk for decreased access (Timmins, 2002).

In addition, prejudice and stereotyping represent mechanisms through which culture influences health care outcomes. In term of racial/ethnic prejudice, some studies have indicated that, after controlling for medical need, there are differences in providers' referral and treatment patterns based on the person's race/ethnicity (Anderson et al. 2003). Conscious or unconscious negative

stereotypes often affect how clinical encounters occur, and also affect patient's and provider's decisions (Geiger, 2001). On the supply side, several studies have shown that there are differences by race in referral for cardiac procedures, in cancer treatment and in analgesic prescribing patterns (Anderson et al. 2003). On the demand side (the patients), mistrust, perceived discrimination and negative interactions in clinical encounters can result in delay or refusal to seek needed care (Anderson et al. 2003). In addition, some studies suggest that mistrust in the medical system by certain ethnic groups is rooted in a long history of medical mistreatment and abuse (Byrd & Clayton 2000, in (McNeil, Campinha-Bacote, Tapscott, & Vample, 2005).

In conclusion, there is a considerable amount of evidence that culture has an influence on healthcare access and outcomes. As stated above, this is a complex issue that involves many participants at different levels, and is rooted in both historic and contemporary inequalities. Therefore, in order to evaluate the extent to which culturally adequate child delivery practices have an effect on health outcomes in Ecuador, this study first focuses on analyzing the main factors associated with the choice of health-facility (institutional) child delivery in a multicultural developing country like Ecuador. This study analyzes whether and how ethnicity/culture affects the choice of home delivery over institutional delivery, and it draws from the literature about potential mechanisms that explain the differences in access to institutional delivery among different ethnic groups.

Cultural Competence in Health Service Delivery

Given the evidence of the critical role cultural differences play in the provision of healthcare, cultural competence in healthcare service delivery can be considered as an important factor to reduce disparities and improve quality of services. Several authors argue that more widespread recognition of the effects of culture in medical practice can help reduce health outcome disparities. For instance, Good's et al. (2011) edited book draws from ethnographic interviews, observations and case studies to demonstrate that culture counts in clinical practice in reducing health inequalities. Similarly, Anderson et al. (2003) explain that culturally competent healthcare systems

have the potential to reduce racial and ethnic health disparities. Additionally, other authors argue that the lack of cultural competence "is likely to result in negative consequences such as patient dissatisfaction, inefficiencies in the health care system, and lower quality of care" (Lavizzo-Mourey & MacKenzie, 1996). Furthermore, Wilson (2012) indicates that, "cultural competence is not an abstract concept or something politically correct to do; it is a process that is necessary to provide holistic care" (Wilson, 2012, p. 10).

Multiple frameworks focusing on how different aspects or dimensions of cultural competence affect health services have been developed. Among the main theories surrounding cultural competence in health services, Wilson (2012) highlights Leininger's *Transcultural Model* and Campinha-Bacote's *Process of Cultural Competence in the Delivery of Healthcare Services* (Wilson, 2012). These two frameworks, along with Flores' (2000) model of culture's effect on clinical care, provide basic concepts and a decomposition of the concept of cultural competence. In addition, Brach and Fraserirector (2000) and Anderson et al. (2003) propose insightful models that explain how cultural competency can reduce racial and ethnic health disparities. Lastly, Fernández Juárez (2006) provides a review of cultural competence in health settings through a Latin American lens.

Conceptualization of cultural competence in health care

First, Madeleine Leininger's theory of culture care focused on transcultural nursing, and recognized the importance of taking culture into account when providing health care services in the 1950s. Leininger' insights about the lack of cultural knowledge in the provision of health care as an important factor to support compliance, healing and wellness in patient care were the first to highlight what she called 'transcultural nursing' (Sitzman & Eichelberger 2010, p. 93). Leininger defined transcultural nursing as:

> "a substantive area of study and practice focused on comparative cultural care (caring) values, beliefs, and practices of individuals or groups of similar or different cultures with the goal of providing culture-specific and universal nursing care practices in promoting health or well-being or

> to help people to face unfavorable human conditions, illness, or death in culturally meaningful ways" (Leininger, 1995, p.58).

Drawing upon transcultural nursing's focus on the cultural dynamics that affect the nurse–client relationship, Leininger developed the 'Theory of Culture Care: Diversity and Universality' with the goal to provide culturally congruent holistic care (Sitzman & Eichelberger, 2010). In general terms, the theory proposes measures to provide healthcare that is in harmony with an individual's or group's cultural beliefs, practices, and values. Therefore, the primary goal of transcultural nursing practice is to provide *culturally congruent care* (a term coined by Leininger in the 1960s), which occurs when the nurse and the patient jointly design a new/different care lifestyle for the health or well-being of the client using both generic and professional knowledge (Sitzman & Eichelberger, 2010). Leininger argued that, since every culture has distinct professional care practices and folk remedies, the nurse must address these factors with each patient in order to provide holistic and culturally congruent care. In addition, Leininger recognized that cultural care beliefs and practices are influenced by social, environmental, economic, religious and ethno-historical factors, as well as by language and different worldviews. Thus, Leininger's theory contends that "culturally beneficial nursing care can only occur when cultural care values, expressions, or patterns are known and used appropriately and knowingly by the nurse providing care" (Sitzman & Eichelberger, 2010, p. 96).

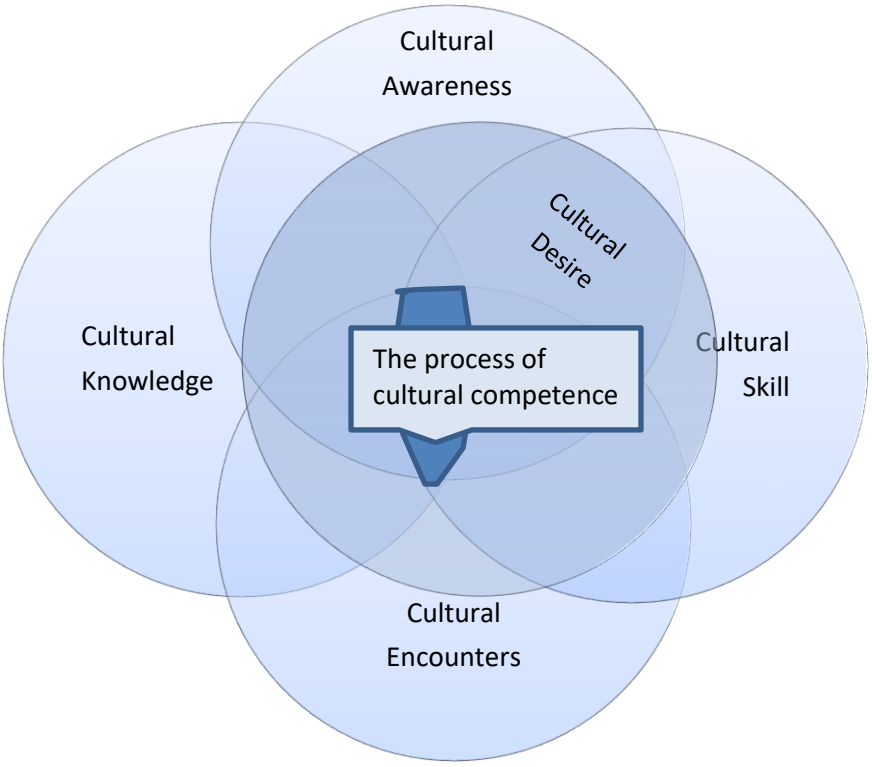
Second, Campinha-Bacote (2002) proposed a framework for cultural competence in the provision of health care services. Campinha-Bacote's theory about the process of cultural competence in healthcare services' delivery has often been used to promote cultural competence in practice settings (Wilson, 2012). In this framework, cultural competence is considered an ongoing process in which the healthcare provider continuously makes an effort to work effectively within the cultural context of the client (Campinha-Bacote, 2002, p.181). The model is based on five constructs: cultural awareness, cultural knowledge, cultural skill, cultural desire, and cultural encounters (see Figure 2.1). First, cultural awareness involves a self-exploration of one's own

cultural and professional culture, and a self-reflection of one's biases and prejudices about individuals of other cultures. Campinha-Bacote explains that, "without being aware of the influence of one's own cultural or professional values, there is risk that the health care provider may engage in cultural imposition" (Campinha-Bacote, 2002, p.182). Second, cultural knowledge is the process of obtaining a sound educational basis about diverse cultural and ethnic groups, and about the integration of three specific issues: health-related beliefs and cultural values, disease incidence and prevalence, and treatment efficacy. Third, cultural skill is the ability to collect relevant cultural data about the patient to accurately provide a culturally based physical assessment. Fourth, cultural encounters are processes in which the health providers may refine their previously held beliefs through direct cross-cultural interactions. Lastly, cultural desire is in the center of the process of cultural competence since it is "the motivation of the health care provider to *want to*, rather than *have to*, engage in the process of becoming culturally aware, culturally knowledgeable, culturally skillful, and familiar with cultural encounters" (Campinha-Bacote, 2002, p. 182). The model indicates (as shown in Figure 2.1) that the intersection of the five constructs is what depicts the true process of cultural competence.

Third, a widely cited paper about cultural competency in health is Glenn Flores' (2000) article presented in part as the keynote speech at the annual meeting of the Council on Medical Student Education in Pediatrics in 1999. Flores explains that culture has a significant effect on health care access and outcomes, and he provides a definition and framework for culturally competent health care:

> Culture clearly affects clinical care. The studies cited document the impact that culture can have on outcomes, quality of health care, and satisfaction with care. A goal for the clinician, therefore, is to provide culturally competent health care in the patient-physician encounter. Cultural competency is defined as recognition of and appropriate response to key cultural features that affect clinical care (Flores, 2000, p.21).

Figure 2.1: The process of cultural competence in the delivery of health care services – Campinha-Bacote



Source: Campinha-Bacote, 2002

Flores' framework consists of 5 components that describe culture's effect on clinical care: normative cultural values, language issues, folk illnesses, patient/parent beliefs, and provider practices. First, health service providers need to be familiar with normative cultural values that may affect the health care of ethnic groups commonly encountered in the practice, and to accommodate for such values (Flores, 2000). Second, he notes that language issues often have a substantial impact on access to care, health status, use of health services, and health outcomes. For instance, Flores explains that Spanish-speaking Latino patients with diabetes and hypertension have better health outlooks when their care provider speaks Spanish. Third, Flores argues that healthcare providers should be sensitive and non-judgmental to folk illnesses, which are defined as "culturally constructed diagnostic categories commonly recognized by an ethnic group often in conflict with biomedical paradigms" (Flores, 2000, p. 18). This is particularly important, since judgmental

responses to folk-illnesses may negatively affect, or even end, future clinical encounters. Fourth, patient/parent beliefs can importantly affect health outcomes since they "can impede preventive efforts, delay or complicate medical care, and result in the use of neutral or harmful remedies" (Flores, 2000, p. 19). Flores recommends that providers use a non-judgmental and sensitive approach in which the clinician learns about a patient's beliefs and tries to replace harmful remedies with harmless ones that are in line with the individual's beliefs. Lastly, Flores notes that an important challenge is that quality of the provision health care often differs according to the patient's culture.

As mentioned above, there are several studies that show that there are ethnic disparities in the provision of health care that persist even after adjusting for relevant covariates. Furthermore, provider practices also affect access to health care, and are often perceived as a barrier to health care by certain ethnic groups (Flores 2000, p. 20). For instance, a study by Zambrana et al. shows that a third of Latino mothers in a pediatric emergency department cited lack of confidence in the health care staff as a barrier to obtaining care for their child (Zambrana, Ell, Dorrington, Wachsman, & Hodge, 1994).

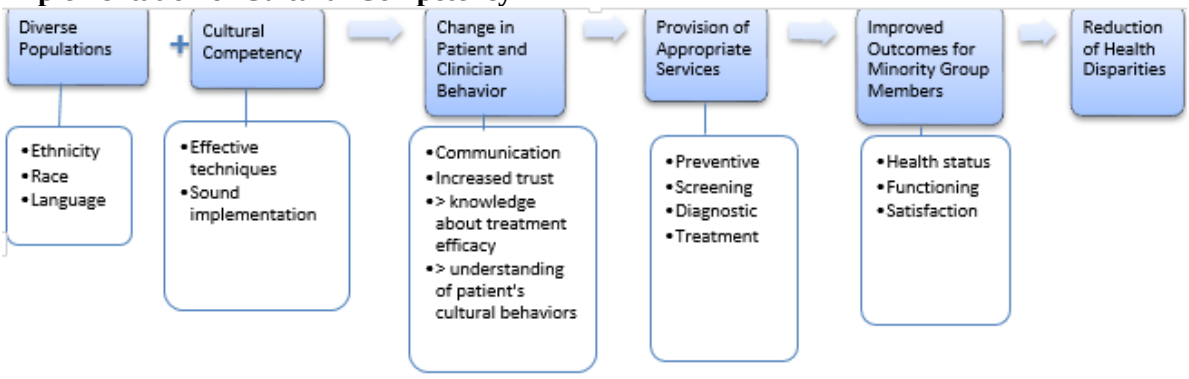
Cultural competency's potential to reduce racial and ethnic health disparities

Brach and Fraserirector (2000) provide an insightful conceptual model of cultural competency's potential to reduce racial and ethnic health disparities. The authors identified nine major cultural competency techniques that appeared in their literature review of both the cultural competency and disparity literature from 1990 to 2000. In addition to practices that focus on clinicians' skills (training, recruiting, and language competency), the authors explain that coordination with traditional healers, use of community health workers, culturally competent health promotion, involving family/community members, and adaptation of administrative and organizational accommodations are techniques that are often used to increase cultural competency (Brach & Fraserirector, 2000). For instance, the adaptation of physical environments can make them more welcoming to minority group members. The authors explain that the research they reviewed failed

to link cultural competency activities with health outcomes, and that the studies on racial and ethnic disparities were weak on identifying the sources of disparities, and often did not pay attention to techniques for reducing them. In addition, they explain that there is substantial research evidence suggesting that cultural competency should in fact work, yet there is little evidence about which cultural competency techniques are effective, and about appropriate timing and proper implementation (Brach & Fraserirector, 2000).

Brach and Fraserirector conclude that their literature review on cultural competency and health disparities "provides strong reason to believe that careful and appropriate implementation of sound cultural competency techniques in delivering health services could go a long way toward reducing disparities" (Brach & Fraserirector, 2000, p.202-203). Brach and Fraserirector's theoretical contribution is their conceptual model (see Figure 2.2). The model indicates how some techniques could, in theory, improve the ability of health systems and their clinicians to deliver appropriate services to diverse populations and, as a result, improve health outcomes and reduce disparities (Brach & Fraserirector, 2000). Thus, this model (along other frameworks in this section) serves as a framework to understand the theory of change underlying the provision of culturally competent health services.

Figure 2.2: Brach and Fraserirector's Model for Reducing Health Disparities through the Implementation of Cultural Competency

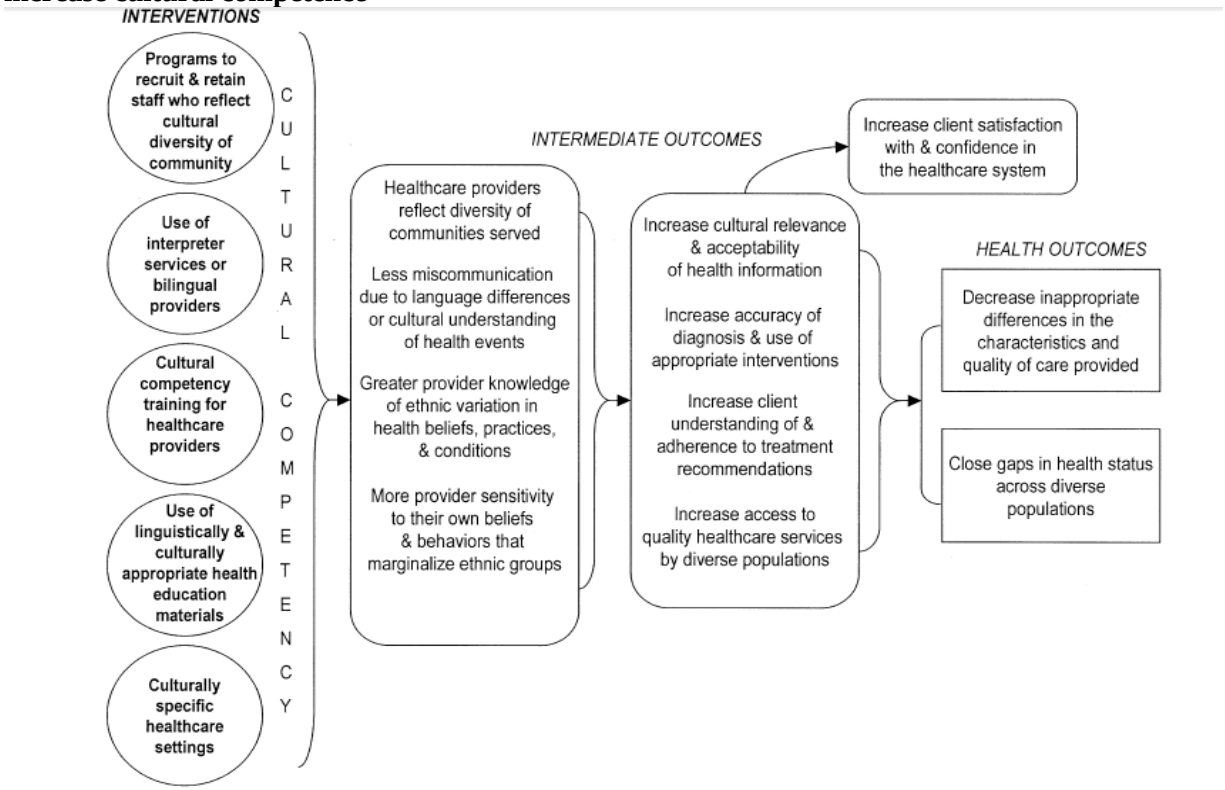


Source: Adapted from Brach and Fraserirector (2000)

Anderson's et al. (2003) analytic framework of cultural competence in health care systems also provides important concepts, and a logical outline of how cultural competency in healthcare

interventions is related to intermediate outcomes, and, eventually, more long-term health outcomes. The authors reviewed five interventions to improve cultural competence in healthcare systems (recruiting/retaining diverse staff, use of interpreters or bilingual providers, training for healthcare providers, use of linguistically and culturally appropriate health education materials, and culturally specific healthcare settings), in search of insights about their effectiveness in affecting client satisfaction with care, improvements in health status, and inappropriate racial/ethnic differences in the use of health services, or in received and recommended treatment. The authors conclude that they could not determine the effectiveness of any of these interventions, because there were either too few comparative studies, or studies did not adequately examine the outcomes (Anderson et al., 2003). Nevertheless, Anderson et al. provide an important analytical framework that contributes to understanding the intermediate and longer-term outcomes of providing culturally competent care (see Figure 2.3).

Figure 2.3: Analytic Framework to evaluate the effectiveness of the healthcare system to increase cultural competence



Source: Anderson et al. 2003

Additionally, Betancourt, Green and Carrillo (2002) performed a literature review and interviewed experts about cultural competence and its benefits for health care. The authors identified the lack of diversity in the healthcare workforce, poor design of health systems for diverse populations, and poor cross-cultural communication between providers and patients as sociocultural barriers to culturally competent health care (Betancourt, Green, & Carrillo, 2002). These barriers occur at the organizational (leadership/workforce), structural (processes of care), and clinical (provider-patient encounter) levels (Betancourt, Green, Carrillo, & Ananeh-Firempong, 2003). Consequently, the authors identified key components of cultural competence that serve as a framework for defining cultural competence in health care: organizational, systemic and clinical cultural competence. Betancourt's et al. (2002) review indicated that only a few studies have found direct links between cultural competency and health care improvement, and are the ones that focus mainly on the need to address language barriers and the importance of training providers to care for diverse patient populations. Yet, a curious finding was that, on the other hand, the experts who were interviewed "drew clear links among cultural competence, quality improvement, and the elimination of racial or ethnic disparities in care" (Betancourt, Green, & Carrillo, 2002, p. 6).

Assessing cultural competence

Linkins et al. (2002) indicate that there is a growing consensus in the U.S. about the importance of cultural competence in health care. The final product of their research - an *Organizational Cultural Competence Assessment Profile* – built on previous work in the field of cultural competence, such as the National Standards for Culturally and Linguistically Appropriate Services (CLAS) of 2001 (Linkins, McIntosh, Bell, & Chong, 2002). Linkins et al. identified seven domains or performance areas for assessing cultural competence: organizational values, governance, planning and M&E, communication, staff development, organizational infrastructure, and services/interventions. These domains are useful in decomposing the construct of cultural competence into smaller parts, which is useful in the context of this dissertation.

In addition, Linkins et al. (2002) identified specific indicators within each domain which can be

categorized in four types: 1) structure indicators, 2) process indicators, 3) output indicators, and 4) intermediate outcome indicators. First, structure indicators are used to evaluate an organization's ability to support cultural competence through adequate and appropriate settings, instruments, and infrastructure. Second, process indicators are used to assess the quality and content of activities, procedures, methods, and interventions in the practice of culturally competent care, and in support of such care. Third, output indicators portray immediate results of culturally competent services that are expected to produce positive outcomes. Lastly, intermediate outcome indicators depict the contribution of cultural competence to the achievement of intermediate objectives in the provision, response, and the results of care.

Cultural competence, health and interculturalism in Latin America

Fernandez Juarez's (2006) anthology on health and interculturalism in Latin America was a collaborative work of more than thirty European and Latin American experts. This work represents an important theoretical and practical contribution to understanding cultural competence in health settings through a Latin American lens, which takes into consideration the regional context and the issues involving diverse indigenous peoples in the region (Fernández Juárez, 2006). Juarez explains that the recent efforts by public health and academic institutions across the region demonstrate that these institutions have begun to value the application of intercultural practices in health. Moreover, health care institutions have begun to recognize the necessity of anthropological analysis' components to understand the complex intercultural reality in Latin America (Fernández Juárez 2006, p. 12).

Among several key concepts and approaches of cultural competence through a Latin American lens, the concepts of medical pluralism and interculturalism are particularly relevant to this dissertation. These concepts capture the key aspects of cultural competency in health care as an important element in clinical encounters in a Latin American context. Moreover, they present two important elements that should be studied, and provoke a reflective stance about the origin of the methodologies and theories used to study interculturalism in health care.

Medical Pluralism

Medical pluralism refers to the recognition of the fact that there are diverse ways (worldviews/epistemologies) to understand sickness and health, and to diagnose and treat illnesses across different societies around the world (Perdiguero, 2006). Medical pluralism is a structural phenomenon and has only started to be seriously discussed in the past few decades. Many of the social and medical sciences' theoretical models used to explain behaviors towards illness have not allowed us to understand the total breadth of medical care pluralism, since they have mainly focused on one of the many therapeutic alternatives: the western biomedical medicine (Perdiguero, 2006, p. 33). This narrow view fails to recognize that the western model is a historical product originated in Europe in the 18th and 19th centuries, and was later spread across the globe. Therefore, incorporating the concept of medical pluralism in a study implies broadening its scope by not only looking at use of institutional health services, but also to examine other things people habitually do to recover their health.

Interculturalism

Interculturalism (or interculturality) in health is a recent concept that was developed in response to claims of indigenous peoples for their right to their cultural identity, and which also corresponds to a global trend of considering the 'right to the difference', which distinguishes and promotes coexistence between different cultural groups in the same territory (Salaverry, 2010). The word *interculturalism* signifies the relationships, interactions and functions between people or cultures given by the coupling of two or more authentic and legitimate realities (Ortega Pérez, 2010). As Ortega explains, "Interculturalism is the dynamic interaction between socio-cultural segments [of the population]" (Ortega Pérez, 2010, p. 131).

Salaverry (2010) mentions that there are some important differences in the conceptualization of *multiculturalism* and *interculturalism*. He explains that multiculturalism implies respect of cultural differences regardless of the origin of diversity, and it is not focused explicitly on native or indigenous populations. The concept of multiculturalism originated in western societies as an

expression of the 'right to difference and diversity' and not necessarily from an ethnic perspective. In this sense, multiculturalism seeks to define and delimit certain homogenous groups as belonging to a certain culture or subculture, and promotes tolerance in the way they relate to each other. Yet, multiculturalism does not necessarily seek the interaction with the culture that surrounds it, nor it seeks an exchange of knowledge between them (Salaverry, 2010, p.83). On the other hand, interculturalism originated in the education field in the 1970s in Latin America and Europe as a reaction to the negative effects of acculturation from some bilingual education initiatives. Interculturalism presupposes the interaction of different cultures, considering that these cultures have to be previously identified in order to recognize their differences (Salaverry, 2010, p. 84). This implies that one should not put together all indigenous communities or nationalities into one single group, but recognize their cultural differences.

Nussbaum (1998) indicates that some authors, such as Cornwell and Stoddard, prefer the term interculturalism, instead of diversity or multiculturalism, since these latter terms are associated with identity politics and relativism (although other authors disagree on this). So, while multiculturalism may imply an uncritical celebration of diversity, interculturalism involves "the recognition of common human needs across cultures and of dissonance and critical dialogue within cultures". (Nussbaum 1998, p. 82). Moreover, Nussbaum explains that understanding is achieved in many different ways, and that knowledge can be enhanced by the awareness of difference. In this sense, the interculturalism perspective rejects the claim that only members of a particular group have the ability to understand the perspective of that group (Nussbaum, 1998).

Interculturalism has been adapted in health services through the influence of the use of the term in anthropology and other social sciences. Salaverry (2010) explains that interculturalism in health is a concept under construction that has been strongly associated with cultural competence in the services provided by health professionals. The push for intercultural health services in Latin America has been made by forces demanding the right to culturally adequate services for indigenous populations, and not by developments within the medicine field (Salaverry, 2010, p.

93). These demands have caused some confusion among health professionals whose medical training did not expose them to interculturalism and anthropology. Thus, "interculturalism in health implies a paradigm shift in medical practice" (Salaverry, 2010, p. 93), and may not be attained only through cultural awareness training.

Since the 1990s there have been various ways in which the term interculturalism in health has been used, which can be summarized in two basic lines of thought. The first line, which is prominent among scholars who study health, illness, and care processes, refers to interculturalism basically in relationship to cultural terms, and recovers some of the main concepts developed by North American anthropologist schools of thought from the 1930's and 1950's (Menendez, 2006, p. 58). Hence, this first line of thought conceives intercultural relations in terms of poor cultural communication conditions that should be improved in order to achieve a better interrelationship between clinicians and patients from diverse backgrounds. Thus, interculturalism recognizes that there are differences in practices and representations of health processes that may negatively affect clinician-patient relationships. The proposed solution to these issues is to educate and inform clinicians and patients about each other's differences in order to promote tolerance and respect, and to foster interactions that improve intercultural relationships and medical efficacy. Although focused educational initiatives may be able to sensitize health care workers, they cannot solve all of the problems in intercultural relations because there are engrained institutional behaviors attached to the dominant biomedical approach that may be more difficult to change (Menendez, 2006, p. 59). The lack of acknowledgement of institutionalized racism is criticized by the second line of thought, which incorporates the topic of dominance within its conceptualization of interculturalism.

The second line of thought about interculturalism and health in Latin America recognizes the significance of the ethnic aspects in conjunction with political and economic aspects in order to recognize that poverty and inequality are important realities that affect intercultural relations (Menendez 2006, p. 60). Moreover, a central point is the autonomy of the groups with respect to

the dominant society since, apart from cultural pluralism and diversity, there could also be incompatibility in the relationships between different groups. In contrast to the first line of thought, this approach considers that educational initiatives and the improvement of communication channels may not be enough to address issues of racism, dominance, social exclusion and stigmatization. Therefore, in order to understand intercultural relations, it is important to consider not only the cultural differences across populations, but also the power and dominance structure within the historical, political and economic context. For instance, in Latin America, the stigmatization and paternalism by Spaniard conquerors towards indigenous people also permeated the health field and have persisted through time. Apart from the devastation of indigenous knowledge, the Spaniard conquerors developed a generalized perception of indigenous people as childish beings who lacked physical, moral and intellectual skills, so their medical practices and beliefs were deemed not worthy, and incomparable to western medicine (Salaverry, 2010, p. 82). This second line of thought opens up an opportunity for researchers to not only reflect upon the dominance relationship between clinicians and populations of different ethnicities, but also to reflect upon the fact that the theory and methodologies used to study interculturalism are also shaped by the gaze of the dominant structure of western developed countries.

In conclusion, by applying the concepts of medical pluralism and interculturalism in health, a study about cultural competence in health (and also cultural competence in evaluation) has to: reflect upon different worldviews; consider dominance relationships between groups; analyze historical; political and economic aspects in order to reflect that poverty and inequality are integral parts of intercultural relations; and recognize the existence of various aspects of health in addition to access to institutionalized health care facilities in which people treat their illnesses. In addition, as Ortega (2010) mentions, the only way to understand a culture is by interpreting their expressions according to their own cultural criteria.

Interculturalism and Maternal Health

In order to understand the disparities in maternal and child health outcomes across ethnic groups in

Latin America, it is important to understand the historic and sociopolitical context. Latin America is a region characterized by high income inequality, which is even more pronounced when ethnicity and race are taken into account. As Campos Navarro (2010) explains, when examining ethnic disparities in Latin America, one has to recognize that the deeply rooted inequality can be greatly explained by the historic depredation of natural and human resources since the European invasion, conquest and colonization. Moreover, he argues that the current neoliberal policies reproduce an unequal system which favors financial capital over our social and cultural capital. Nevertheless, in the past few decades there has been increased recognition of indigenous peoples' rights, which are illustrated by the international norms and declarations such as 2007 UN Declaration of Indigenous Rights. It is within this sociopolitical context that high maternal and child mortality rates among indigenous populations can be seen as one result of poverty and inequality in the public health arena. Social inequalities affect maternal and child health outcomes to a great extent (Campos Navarro, 2010, p.199). Thus, an intercultural strategy can foster "dialogue and respect among women, men, and decision-makers and can contribute to the realization of reproductive health rights and improvement of health outcomes" (Camacho et al., 2006, p. 357).

In conclusion, many scholars have contributed to rich theory that highlights the importance of cultural competence in health care, and its potential benefits in reducing racial and ethnic health disparities. The application of the concepts of medical pluralism and interculturalism, as seen in Latin American literature, reinforce the arguments in favor of cultural competency in health and provide a Latin American perspective. This vast literature provides a theoretical grounding and motivation for this dissertation's research on cultural competence. There are several frameworks and models to draw upon to conceptualize cultural competence in healthcare, which are refined in the next section to narrow the focus on childbirth. Brach and Fraserirector's (2000) model and Anderson's et al. (2003) framework served as a starting point for understanding the theory of change behind the provision of culturally adequate maternal health services in the Ecuadorian

context. The next section of this chapter narrows the focus of cultural competence in health to review the literature that focuses particularly on maternal and child health.

Cultural Competence and Maternal and Child Health

Having reviewed the literature on cultural competence and health, it is also important for this study to review research on how culture and cultural competence are related to maternal and child health outcomes. There is vast literature that suggest that childbearing practices are highly influenced by cultural beliefs and values (Andrews & Boyle, 2008; Campinha-Bacote, 2002; Fernandez Juarez 2010; Leininger, 1995; Noble, Rom, Wicks, Englehardt & Wruble, 2009; Purnell & Paulanka, 1998; Schuiling & Sampselle, 1999; Weber, 1996; Wilson 2012). Perceptions about childbirth experience and practices vary widely across different cultures and have also evolved through time. The process and experience of childbirth may be viewed differently since each woman brings her lived experience to it, which is influenced by the culture with which she identifies (Ottani, 2002, cited in Wilson 2012, p. 11). In addition, since most maternal deaths occur during childbirth, the place where they occur and the presence of skilled attendants during childbirth are important. For this reason, culturally competent services play a key role in improving access and quality of maternal health care, and have the potential to improve maternal and child health outcomes.

One well-documented and recommended practice to reduce maternal mortality, access to skilled attendance at birth –an explicit indicator for Millennium Development Goal #2– has also been studied empirically. For instance, Chowdhury et al. (2007) assess the contribution of intervention strategies, such as skilled attendance at birth, to the recorded reduction in maternal mortality in Matlab, Bangladesh through a 30-year cohort study. Their findings indicate that the speed of decline in maternal mortality was faster after the skilled-attendance strategy was introduced in the International Center for Diarrheal Disease Research service area in 1990. The study showed that educational differentials for mortality were substantial, and that the reduction in maternal mortality over 30 years occurred despite a low uptake of skilled attendance at birth. The authors explain that

part of the decline was due to a decrease in abortion-related deaths, better access to emergency obstetric care, and the contribution of midwives in facilitating access to emergency care. Lastly, the authors argue that, apart from the aforementioned factors, additional policies, such as the expansion of female education, better financial access for the poor, and poverty reduction, are essential to sustain the successes achieved to date (Chowdhury et al., 2007). So, access to skilled attendance at birth can be regarded as one of the important factors that affects maternal and child mortality rates.

Access, quality, and culturally adequate procedures related to maternal health services are important factors that are associated with better child and maternal health outcomes. Therefore, there are negative consequences when cultural aspects are ignored in the provision of maternal health services. As Camacho et al. (2006) explain,

> "the biomedical health model, which discounts cultural influences, prevails globally over a more integrated approach. This leads to a lack of access and use of quality reproductive health services and care among indigenous people and is one of several important factors contributing to high levels of maternal mortality and poor reproductive health among indigenous women" (Camacho, Castro, & Kaufman, 2006, p.1).

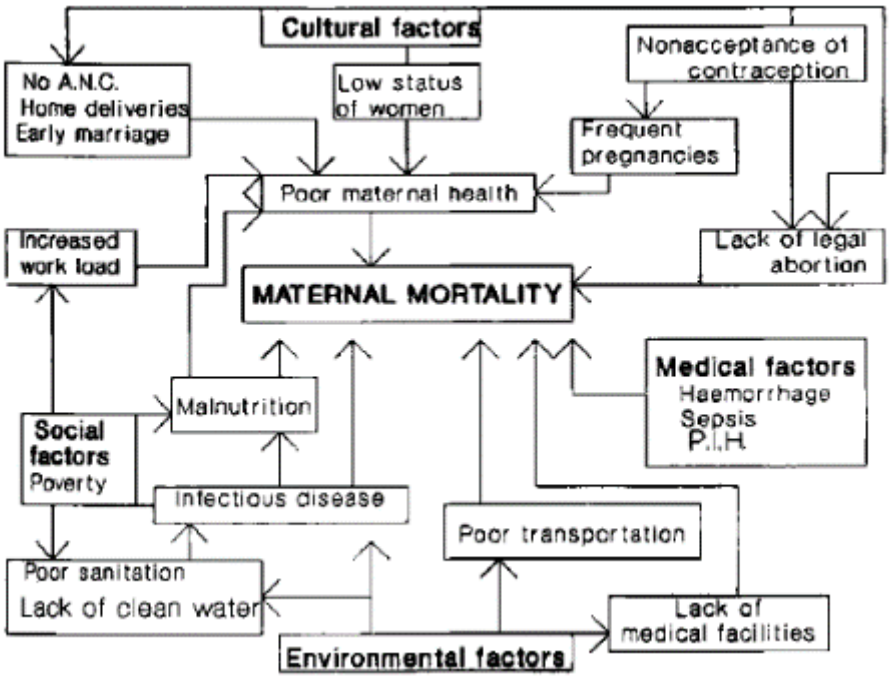
Thus, in order to understand how to improve access and use of quality health services in Ecuador there is a need to delve deeper into the determinants of maternal mortality, the factors associated with the institutional child delivery choices, and the Latin American experience with provision of maternal health services.

Determinants of maternal mortality

Maternal mortality is the product of a series of negative events in a woman's life, pregnancy being the last one (Stokoe, 1991). Through a 10-year review of research from the developing world, Stokoe examines the determinants of maternal mortality based on hospital statistics and discusses methods of reducing maternal mortality through policies addressing health care needs. Stokoe explains that the main factors that affect women during pregnancy and childbirth, and in turn are importantly related with maternal mortality, are poor nutrition, poverty, and a lack of education, sanitation, and accessible health care. Moreover, Stokoe categorizes the determinants into four

main groups: cultural factors, medical factors, social factors and environmental factors (see Figure 2.4). As Figure 2.4 shows, cultural factors affect the decisions to access ante-natal care, and the preferences for home deliveries. In addition, cultural factors have an important influence on early marriage, non-acceptance of contraception and the acceptability of abortions, and on the status of women in the society, which are all related to poor maternal health. The interaction of these complex factors, along with the interplay of social factors (such as poverty, which is related to malnutrition and lower access to sanitation and clean water), medical factors (e.g. hemorrhaging and sepsis), and environmental factors (availability and access to medical facilities and basic services), represent a dynamic system that explains maternal mortality.

Figure 2.4: Determinants of Maternal Mortality



Source: Stokoe, 1991, p. 13

Regarding environmental factors, health system characteristics are important determinants of maternal and child health outcomes. Muldoon et al. (2011) examined the association between health system indicators and maternal mortality rates in 136 countries using 13 explanatory variables outlined by the World Health Organization. Among their findings, the authors conclude that several

key measures of a health system predict maternal, child and infant mortality rates at the national level. The authors explain that significant protective health system determinants related to infant and child mortality rate include: higher physician density, higher sustainable access to water and sanitation, and having a less corrupt government. In addition, protective determinants of maternal mortality rate include: access to water and sanitation, having a less corrupt government, higher total expenditures on health per capita; conversely, higher fertility rates were found to be a significant risk factor for maternal mortality rate (Muldoon et al., 2011).

In a similar line as Stokoe, McCarthy & Maine (1992) developed a framework for analyzing the determinants of maternal mortality. Their framework indicates that there are three stages related to the process of maternal mortality. First, closest to the event of a maternal death are a series of outcomes that culminate in either maternal death or disability; these outcomes are pregnancy and pregnancy-related complications (e.g. hemorrhage, infection, obstructed labor, pre-eclampsia, ruptured uterus). Second, these outcomes are directly influenced by five sets of intermediate determinants: health status of the woman; reproductive status; access to health services; health care behavior (including use of health services); and a set of unknown factors (McCarthy & Maine, 1992). Lastly, this framework implies that socioeconomic and cultural factors (which are considered to be distant determinants) may affect maternal mortality through the mediation of five sets of intermediate determinants. Yet, the intermediate determinants of access and use of health services may also be related to cultural competency. The authors conclude that all determinants of maternal mortality must operate through a sequence of intermediate outcomes. Therefore, efforts to reduce maternal mortality should (1) reduce the likelihood of pregnancies, (2) reduce the likelihood of pregnant women experiencing serious complications during pregnancy or child birth or, (3) improve the outcomes for women with complications (McCarthy & Maine, 1992).

In conclusion, as McCarthy & Maine's (1992), Stokoe's (1991), and Muldoon's et al. (2011) studies indicate, maternal mortality occurs as a result of the interplay of social, environmental, cultural, and medical factors. Therefore, keeping in mind the complexity of the issue, this

dissertation focuses on only a portion of these factors (mainly the cultural factors) in order to uncover how culturally competent services may affect the quality and access to institutional delivery services in Ecuador, which in turn would affect maternal and child mortality rates. The next sections explain how the several determinants mentioned in the literature are considered to help explain the extent to which culturally adequate child delivery services affect the proportion of institutional deliveries, health outcomes (maternal mortality rates) and perceptions of health care in Ecuador.

Conceptual models about culture, maternal mortality, and access to institutional child delivery services

Given the recognition of the influence of culture on maternal health outcomes, it is important to understand the mechanisms through which culture affects maternal and child mortality rates. Thaddeus and Maine's (1994), and Evans' (2013) frameworks are useful for this purpose. Thaddeus and Maine's (1994) 'three delays' framework indicates that culture affects the decision of seeking care. Evans expands Thaddeus and Maine's work, and indicates that there are four ways in which culture may affect maternal mortality: use of care, directly harmful acts, inaction, and social status. The main contribution of these frameworks for this dissertation is their explanation of the mechanisms through which culturally competent maternal services may affect access to care and maternal health outcomes.

The Three Delays

Systematic reviews of the literature provide a basis for the creation of informed conceptual frameworks to explain the relationship between culture and maternal health outcomes. Thaddeus and Maine's (1994) review of the role of culture in maternal mortality through inaction led to the development of his conceptual framework of 'three delays', which explained the three phases in which women could potentially be prevented from access to maternal care: delay in deciding to seek care, reaching care, and receiving care (see Figure 2.5). Although there are several factors that contribute to maternal mortality, the authors focus on those that affect the interval between the

onset of obstetric complication and its outcome. This choice to narrow the scope of the study was made on the assumption that outcomes are usually satisfactory if timely and adequate treatment is provided; therefore, maternal and child health outcomes are most adversely affected by delays in treatment.

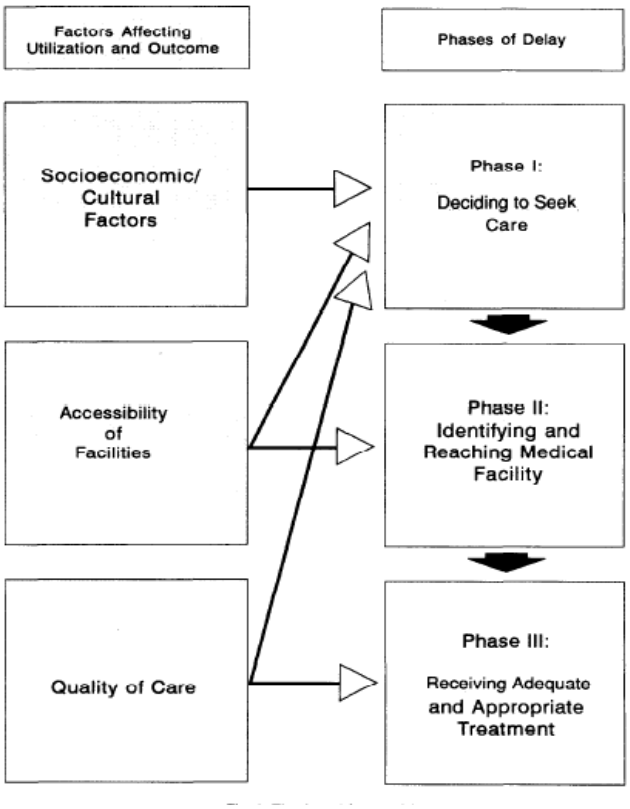
Regarding the first type of delay –delay in deciding to seek care– the authors mention several socioeconomic and cultural factors, as well as health care supply factors, that affect the decision making process: the actors involved in decision-making (individual, spouse, relative, family); the status of women; illness characteristics; distance from the health facility; financial and opportunity costs; previous experience with the health care system; and perceived quality of care (Thaddeus & Maine 1994). In addition, the authors indicate that cost, distance and quality considerations (which are widely recognized in the literature as major obstacles in the decisions to seek care) alone do not provide a full understanding of the decision-making process. Therefore, there are other considerations, such as illness-related factors, gender and socioeconomic status that play an important role in the decision-making process to seek care (Thaddeus & Maine, 1994).

Thaddeus and Maine's model reflects a view that the choice of where and how to deliver a baby is affected by various supply side systemic factors (e.g. the availability of doctors and health facilities), and demand side factors related to personal and cultural preferences. As Exavery et al. (2014) mention, although there are various studies about the factors that influence institutional delivery, a comprehensive review is lacking. Moreover, "most studies have assessed place of delivery relying on individual factors (demand side factors) with limited account of systemic factors (supply side factors). Thus, it is important to consider that health service utilization is a function of both demand and supply factors" (Exavery et al., 2014, p.2).

Nevertheless, Thaddeus and Maine indicate that the decision of seeking care is not the only factor that affects maternal health outcomes. Even if a patient makes a timely decision to seek care, s/he could still experience a delay in treatment (delay in reaching care). This situation often occurs because the accessibility of health services is a persisting problem in the developing world, which

affects rural populations even more. Lastly, a third type of delay –delay in receiving care– can occur even after a person decides to seek and reaches care. This may be due to shortages in medicines, qualified staff, and equipment, or due to clinical mismanagement and/or administrative delays (Thaddeus & Maine, 1994). In sum, Thaddeus and Maine's 'three delays' model is a useful framework to understand the role of culture in maternal mortality.

Figure 2.5: Thaddeus and Maine's 'Three Delays Model'



Source: Thaddeus and Maine 1994

Evans' Extended Model

Evans' (2013) systematic review of cultural influence on maternal mortality in the developing world explains that studies indicate that culture has an important influence on childbirth practices. Moreover, she indicates that, "no review to date has examined research with the objective of understanding the relationship between culture and maternal mortality" (Evans 2013, p. 492). Evans explains that previous studies rarely make a connection between cultural practices and maternal mortality. Thus, "there is a clear need for careful consideration and examination of the

ways in which culture dictates maternal health behavior and affects mortality rates" (Evans, 2013, p. 495). Evans indicates that Thaddeus and Maine's concept of 'three delays' has informed the study and design of many maternal mortality interventions, and has been used as a framework for research on low healthcare use in developing countries. Nevertheless, Evans argues that culture is usually not the focus in this framework, and it fails to describe cultural perceptions of formal healthcare or other cultural factors that may affect the choice of women to access an adequate health care facility. Therefore, Evans' review advances research on culture and maternal mortality by developing a more expansive theoretical framework.

Evans makes reference to Thaddeus and Maine's conceptual framework of the 'three delays' and argues that culture affects the first of these delays – women's decision to seek care. Evans's (2013) systematic review of cultural influence on maternal mortality in the developing world suggests there are four ways in which culture may affect maternal mortality: use of care, directly harmful acts, inaction, and social status. Evans also indicates that most primary research studies in the review were mainly qualitative and provided detailed descriptions of culture surrounding baby delivery in various communities. Yet, these studies rarely make a connection between cultural practices and maternal mortality (Evans, 2013). Therefore, the purpose of this dissertation is to fill in this gap by assessing how the implementation of Ecuador's 2008 guidelines for culturally adequate child delivery services have affected maternal and child health outcomes and access to care.

Latin American perspective about culture and maternal health

While there are useful frameworks regarding the determinants of maternal mortality and conceptual models about the mechanisms through which culture may affect maternal and child health outcomes, it is also important to understand Latin American perspectives about culture and maternal health. Culture affects how people conceive illness and health within their communities. Cultural and social models are transmitted by individuals through families and institutional domains and are the basis for health practices, knowledge and attitudes among specific populations.

Camacho et al. (2006) explain that the main Latin American ethnic groups (Mayan, Aymara, Quechua, Guarani) use different stories to define health from a comprehensive perspective, which includes physical, spiritual and emotional components. Therefore, wellbeing can be achieved by a series of prescriptions aimed to attain a balanced relationship between these elements (Camacho et al., 2006). Cultural beliefs also influence how reproductive cycles are conceived, and how they affect other important community activities. For instance, "among indigenous women, reproductive cycles are strongly linked to the sacred dimensions of nature and space" (Camacho et al. 2006, p. 359). This has an effect on certain activities, such as weaving, food preparation, and crop production, which are regarded as 'feminine' and therefore assessed according to the reproductive, agricultural and lunar cycles.

Cultural beliefs permeate health practices, attitudes, knowledge and beliefs regarding pregnancy and childbirth. For instance, Camacho et al. explain that there are certain particular beliefs surrounding pregnant women's wellbeing, such as body temperature (the mother should be well-covered and should not be exposed to air currents), spiritual (women should not transgress cultural taboos), emotional (women should avoid fright, displeasure), and food related (warm and fresh food for women are preferred before delivery). Moreover, birth is seen by certain indigenous groups as occurring in two stages. The first stage includes labor pains up to dilatation and birth of the baby. The second stage is the expulsion of the placenta, which is treated as another birth, and is given great attention due to its symbolism of life and death (Camacho et al., 2006). There are many ethnic groups that perform a burial (death) ritual for the placenta.

Lastly, culture also affects women's social status, and influences the perceptions of acceptable gender roles. Gender-driven social relationships are closely connected to the cultural context. Thus, Camacho et al. explain that the cultural construction of gender roles often does not allow for consideration of the woman as an integral, autonomous person with rights. "On the contrary, the culturally assigned roles of women as mothers, caretakers and dependents have made the expression and autonomous development of self, body, health and decisions nearly impossible for

many women, and this circumstance is not confined to Latin America." (Camacho et al. 2006, p. 359). So, it is also important to assess how gender roles are conceived within a culture, since they may affect reproductive, pregnancy and childbirth decisions.

In conclusion, there are several frameworks that explain how culture affects health outcomes in general, and also about the mechanisms through which culture may affect maternal and child health outcomes. Culture may affect maternal mortality through delays in seeking care, by directly harmful acts, inaction and social status. In addition, there are certain beliefs which are particular to Latin American indigenous groups that should be taken into account for this study. It is important to clarify that this study is not assuming that cultural beliefs should be blamed for poor maternal health outcomes, but that it is important to consider how cultural factors may affect the decision of seeking care given the availability of accessible quality health care services that are tailored towards the population's needs. It is clear that maternal and child mortality are a result of the interplay of dynamic forces which may affect the decision to seek care, which in turn is affected by the perceived quality and cultural adequacy of the available services. So, policies that aim to provide culturally adequate/competent services may impact maternal and child health outcomes through the quality of services and increased access to skilled attendance at birth.

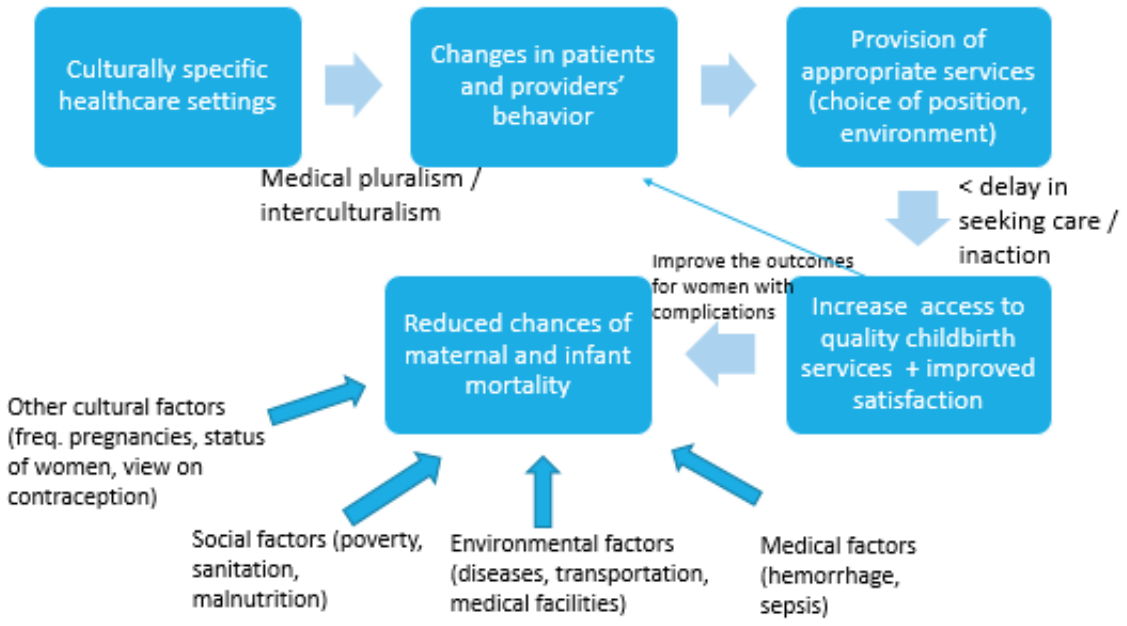
A proposed integral model for the Ecuadorian case

Based on the literature on maternal mortality determinants, and on the conceptual models about culture and maternal health described above, Figure 2.6 presents a proposed model of the effects of culturally adequate health facilities on maternal and child health outcomes. This model was mainly based on the concepts and frameworks by Brach and Fraserirector (2000); Anderson et al. (2003); Fernandez Juarez (2006); Stokoe (1991); McCarthy & Maine (1992); Thaddeus & Maine (1994); and Evans (2013).

The proposed model presents a framework to understand how the implementation of culturally adequate services, which include the physical adaptation of childbirth rooms within public hospitals, may lead to a reduction in maternal and child mortality. As the model shows, there is a

feedback loop between increased access to quality services + improved satisfaction and changes in patients' and providers' behaviors. These changes in behavior can reinforce the positive image of culturally adequate services which affect 1) the provision of appropriate services and 2) may reduce the patients' delay in seeking care due to a higher level of trust in the medical system. Moreover, the proposed model makes the explicit connection between increased access to institutional deliveries and maternal mortality by a specific mechanism: improving the outcomes for women with complications. This model takes into consideration that there are exogenous factors that determine maternal and child mortality, such as cultural, social, environmental and medical factors, which form part of a complex system.

Figure 2.6: Proposed model of the effects of culturally adequate health facilities on maternal and child health outcomes



Review of Empirical Studies on Access to Institutional Delivery and Cultural Competence

Institutional (health facility) baby delivery is often encouraged as a single most important strategy in preventing maternal mortality. For instance, a Ministry of Public Health (MSP) report (2010) about the actions taken by MSP to reduce maternal mortality (MMR) in Ecuador indicates that a

correlation analysis between MMR and several MSP strategies from 1998-2008 shows that the strategy involving childbirth/delivery and immediate postpartum care is the one that explains most of the reduction in MMR. Specifically, MSP indicates that 48%[4] of the reduction in MMR can be explained by the increase in institutional deliveries by skilled birth attendants, while fertility, postpartum and antenatal care strategies explain only 35%, 30% and 26%, respectively (Ministerio de Salud Pública del Ecuador, 2010).

In addition to reviewing empirical studies about the relationship between cultural competence and maternal health outcomes, it is important to understand what factors are associated with increased institutional delivery. Although the various studies of this topic differ in the framing of their questions, design, methods, data sources, geographic focus, and limitations, similar conclusions can be drawn regarding the importance of culture and perceptions of quality in accessing skilled care for child delivery. For instance, the key findings of Evans (2013), Exavery et al. (2014), Ebuehi and Akintujoye (2012), Sychareun et al. (2012), and Miller et al. (2003) suggest that cultural beliefs, customs, and values play an important role on women's behaviors during the perinatal period and often have an effect on the likelihood of maternal death in childbirth.

Previous studies exploring themes of cultural competence or the influence of culture, on birth outcomes and/or health facility delivery can be separated into two categories that are relevant to the research questions in this study. First, some previous studies analyzed the determinants of access to institutional, skilled care, or home delivery. In addition, Miller's et al. study, which argues that access and availability of institutional delivery alone is not enough to decrease maternal mortality, illustrates the importance of quality of health services in relationship with maternal health outcomes. A second category, which is closely related with question 1.b. of this dissertation, is represented by research that assesses the effects of cultural adaptation of childbirth services on health outcomes.

[4] These percentages represent the R-squared coefficients of bivariate regression analysis.

Access to institutional or skilled care child delivery services

Recent studies by Moyer and Mustafa (2013), Exavery et al. (2014), Ebuehi and Akintujoye (2012), Sychareun et al. (2012) and Abeje at al. (2014) examine the factors associated with the choice of place for child delivery (institutional, home or with traditional healers). These articles fit into Evans' 'use of care' description of how culture affects maternal mortality. Among the literature that explicitly report findings that relate ethnicity with the choice of institutional versus home deliveries, Exavery's et al. (2014) and Ebuehi and Akintujoye's (2012) studies consisted of non-observational cross-sectional analyses in Tanzania and Nigeria, respectively. In addition, Sychareun et al. (2012) delve into the reasons why Laotians choose home delivery instead of institutional deliveries using a qualitative approach and a sample of 71 women and family members. Lastly, Kolodin, Rodriguez, and Alegria-Flores (2015) examine socio-cultural factors and the influence of family in the decision-making process regarding the choice of the place of childbirth.

Access to institutional delivery is a complex issue which is determined by an interplay of several factors pertaining the pregnant women's characteristics and the health system conditions that surround them. Moyer and Mustafa's (2013) systematic review of drivers and deterrents of institutional delivery in Sub-Saharan Africa indicates that the 43 multivariate analysis papers they reviewed suggest that birth order, parity, educational attainment, socio-economic status, urban/rural localities, distance to the nearest facility, and number of antenatal care visits were the factors most consistently associated with institutional delivery (Moyer & Mustafa, 2013). Moreover, the authors mention that ethnicity was not consistently found to be associated with institutional delivery since in some cases ethnic minorities were less likely and in other cases more likely to access institutional delivery care. The authors also mention that there is still a remaining question about whether there is something particular about ethnicity that may predispose some women to not deliver at a health facility or if ethnicity is only a proxy for other socioeconomic factors (Moyer & Mustafa, 2013).

Exavery's et al. (2014) and Ebuehi & Akintujoye's (2012) findings suggest that there is evidence to support the claim that culture/ethnicity play an important role in determining the chosen place

for childbirth. Exavery's et al. paper (2014) analyzes the determinants of access to institutionalized care delivery in Tanzania. The authors indicate that, in contrast to factors that were associated positively with access to care (higher quality of antenatal care, higher socioeconomic status, and the presence of couple discussion on family planning matters), women of Sukuma ethnic background were less likely to deliver at health facilities than others. Thus, the findings of this study support the claim that culture has an effect on the choice of institutional delivery, which is in line with other studies reviewed by Evans. Ebuehi & Akintujoye's paper (2012) looks at the other side of the coin, and explores pregnant women's perceptions and utilization of traditional birth attendant (TBA) services in a rural Local Government Area in Nigeria. Their paper complements and extends Exavery's et al. findings by analyzing the reasons behind women's (and their family members) perceptions and choices related to child delivery. Among the key findings, the authors mention that the study revealed a positive perception and use of TBAs services by the respondents since they are considered cheaper, perceived as more compassionate than orthodox health workers, and more acceptable in their cultures, among others. Moreover, the results indicated that positive attitude toward TBAs and their services is the strongest influencing factor on past or current use, and that these attitudes may be influenced by different factors including access (geographic, financial) and sociocultural beliefs (Ebuehi & Akintujoye, 2012). Therefore, Ebuehi and Akintujoye's paper also suggests that cultural traditions and perceptions are important factors that influence preference over home, TBA, or institutional child delivery.

In line with Ebuehi and Akintuhoye's (2012) paper, Sychareun et al. (2012) analyze why Laotians choose home delivery instead of institutional deliveries. This qualitative study in remote and intermediate-access districts of two provinces of Lao People's Democratic Republic indicates that the main obstacles to giving birth at health facilities include costs, distance, attitudes towards health care, quality of health care, and factors associated with certain traditional practices (including position at birth, the wish to have family members nearby, and lying on a 'hot bed' after delivery). The decision about where to give birth was commonly made by the woman's husband, mother,

mother-in-law or other relatives in consultation with the woman herself (Sychareun et al., 2012). Abeje's et al. (2014) study on institutional delivery service utilization in Ethiopia finds that access to institutional delivery is affected by the interaction of personal, socio-cultural, behavioral and institutional factors. Consistent with studies conducted in Africa and Southern Asia, Abeje et al. found that socio-economic, socio-demographic, ante-natal care attendance and aspects related to health-services are factors associated with institutional delivery service utilization. Specifically, this cross-sectional study found that urban mothers were more likely to access institutional delivery, and that age at first marriage, educational status of the women and gestational age at first ante-natal visit are independent predictors of delivery service utilization (Abeje, Azage, & Setegn, 2014).

Kolodin's et al. (2015) qualitative study also provides important insights about the influence of socio-cultural factors and the influence of family in the decision-making process regarding the choice of the place of childbirth (home or health institution). The authors conducted 628 semi-structured interviews in 29 communities in México, Guatemala, Panamá, Honduras and Nicaragua using a *net-map* social network analysis approach. The authors found that pregnancy-related and childbirth decisions are generally made by the family. Indigenous and rural pregnant women usually have little power in the decision-making process, although this varies depending on their education level, age and social status. Childbirth decisions are mainly made by the pregnant woman's spouse/partner and the pregnant woman's mother (although in Mexico and Nicaragua the mother-in-law also played an important role). Men usually have a more prominent role in decisions during obstetric emergencies, and regarding transportation and financial costs. While medical personnel were found to have minimal influence in the social network surrounding the decision-making process, their biomedical knowledge about pregnancy and childbirth makes them important influencing actors during obstetric emergencies (Kolodin, Rodríguez, & Alegría-Flores, 2015). Lastly, the authors highlight the importance of quality and *calidez*[5] in service delivery, and explain

[5] The direct English translation of this concept is "warmth", yet in Spanish it means that the services are provided in a friendly, respectful and caring manner.

that policies promoting cultural competency in childbirth should not only focus on infrastructure and equipment, but should also keep in mind the socio-cultural context of each community. Therefore, this study provides useful insights about the social aspects of decision-making surrounding childbirth which were incorporated into the interview protocol of this study.

Importance of Quality in Health Care

Miller's et al. (2003) study is focused on understanding the paradox of the Dominican Republic's relatively high maternal mortality ratio despite nearly universal institutionalized deliveries with trained attendants. Its main findings are relevant to this dissertation since they point out the importance of quality in health care delivery. The authors assembled a multidisciplinary team that reviewed national statistics and hospital records, inventoried facilities, observed peripartum client-provider interactions at 14 facilities, and observed the adherence to norms for care of labor and delivery. The researchers found that major referral hospitals were overcrowded and understaffed, and that uncomplicated labor and deliveries were over-medicalized, while complicated ones were not managed appropriately. In addition, there was no privacy, no dignity, and no attempt to honor the human and reproductive rights of the laboring women in referral hospitals (Miller et al., 2003). Thus, the authors concluded that access and availability of institutional delivery alone is not enough to decrease MMR, it is also the quality of emergency obstetric care that saves lives. Miller et al.'s main conclusion is also a good complement to the studies detailed above, since it describes quality as the important mediating factor between access to institutional health care and a reduction of maternal mortality. Moreover, if what is considered "quality care" varies by culture, then the findings of this study are very relevant to ethnically diverse contexts. Accessing institutional or skilled care could be a good first step, but may not be enough to improve maternal and infant health outcomes if quality is poor.

Cultural adaptation of birthing services

An increasing number of studies that compare conventional maternity care with alternative birth

environments have found positive results for more culturally adequate services. Hodnett, Dawne & Walsh (2012) conducted a systematic review of randomized or quasi-randomized controlled trials which compared the effects of an alternative institutional birth environment with conventional maternity ward care. The authors found that there are certain benefits of alternative institutional settings for birth: increased likelihood of spontaneous vaginal birth, labor and birth without analgesia/anesthesia, breastfeeding at 6-8 weeks postpartum, satisfaction with care, and decreased likelihood of oxytocin augmentation, assisted vaginal birth, caesarean birth, and episiotomy (Hodnett, Downe, & Walsh, 2012).

Several studies and articles published in the past two decades indicate "a growing awareness of the need to incorporate culture into the design of appropriate care to improve maternal and newborn outcomes" (Coast, Jones, Portela, & Lattof, 2014). Coast et al. (2014) conducted a systematic mapping of the literature to analyze the range of interventions that have been implemented across countries to address cultural factors affecting women's use of skilled maternity care services. The authors reviewed journal articles and gray literature from 1990-2013 published in English, French and Spanish and found that from the 96 studies that met their criteria, only 23 of them aimed to measure intervention impact through the use of experimental or observational-analytic designs (Coast et al., 2014). It is striking that only 3 Latin American studies in this review incorporated observational-analytic designs, and none of them focused on service delivery models nor service provider interventions. The authors explain that a diverse range of interventions to address cultural factors that affect the use of skilled maternity care has been implemented in 35 countries. Coast et al. classified the interventions into five types: (1) service delivery models; (2) service provider interventions; (3) health education interventions; (4) participatory approaches; and (5) mental health interventions. Overall, the systematic mapping found examples of good practices and success stories, but some of the studies provide insufficient details to understand how the interventions addressed cultural factors. Yet, the authors indicate that since culture is an elusive and complex concept, their research has some limitations due to the diverse operationalizations and

conceptualizations of culture in the reviewed studies.

Gabrysch's et al. (2009) study, which is relevant to the Ecuadorian context, provides an insightful view about the implementation and outcomes of cultural adaptation of childbirth services in rural Ayacucho, Peru. The study consisted of a cross-sectional analysis and a descriptive comparison of the proportion of child deliveries attended by health professionals in the community through time. The authors found that after the new culturally adapted vertical delivery model was implemented in 2000, it was chosen by most women delivering there. Ninety percent of the women were satisfied with the service and felt well-attended. Moreover, the percent of institutional deliveries in the area increased from 6% in 1999 to 83% in 2007, with most of the change taking place in the first 2 years after implementation. The authors argue that a key factor for the project's success and sustainability was its participatory approach, which ensured that the delivery services really met the needs of the local population.

Studies about culturally competent childbirth services in Ecuador

There are three important studies about cultural competence in childbirth in Ecuador that assess different aspects surrounding the issue. First, Arteaga et al. (2012) provide very important and useful insights about how to conceptualize cultural competence indicators for maternal health care in an Amazon province in Ecuador. They used a participatory approach and incorporated indigenous perspectives. Second, Quisaguano Mora's qualitative study provides important insights about power dominance of medical personnel with respect to traditional midwives and patients. Lastly, a study by URC and MSP in four Ecuadorian provinces shows that patients' satisfaction with different aspects regarding maternal health services increased more in locations where culturally adequate services were provided (Dovey & Ransom, 2009).

Arteaga's et al. (2012) study provides an important initial step in the assessment of cultural competence in maternal health services in Ecuador. The authors conducted participatory action research study to develop indicators for measuring the implementation of an intercultural health model, with indigenous users and indigenous and non-indigenous health providers. The authors

conducted a case study of the intercultural health model in Loreto county, Orellana province, Ecuador, which has been developing a comprehensive health system for more than a decade. Since 2008, Loreto´s health center implemented an intercultural (culturally adequate) child delivery home, in which traditional midwives assisted childbirth following MSP's technical guidelines for culturally adequate birthing services. The authors explain that from 2007 to 2008 the number of vertical deliveries increased from 14% to 34%, and that the majority of patients were from the Kichwa indigenous nationality (Arteaga, San Sebastián, & Amores, 2012). The results of the study were the identification of 32 indicators of culturally competent maternal health services, which were divided into four dimensions: communication and language; health services provision; health services integrated with the community's culture and knowledge, and exchange of experiences. This study provides an important initial step in the assessment of cultural competence in maternal health services, and offers a unique approach that incorporates the point of views of indigenous users and providers which have not been previously considered in Ecuador's national intercultural health strategy (Arteaga et al., 2012). Yet, as the authors mention, many of the indicators are related to the quality of service, rather than being a matter of cultural difference.

Through a qualitative study Quisaguano Mora (2012) analyzed the inclusion of indigenous women in the government's discourse and the conceptualization of culturally adequate childbirth practices in Ecuador from the perspective of indigenous users, midwives and non-indigenous health providers in Otavalo, Ecuador. Quisaguano Mora viewed the MSP technical guidelines as a bridge between the state and the indigenous population in order to reduce maternal and child mortality. The author finds that the implementation of the MSP guidelines often makes medical personnel reflect upon their practices, prompting them to provide more humanized services, regardless of the women's ethnicity (Quisaguano Mora, 2012). Some examples of how medical personnel can improve the quality of their services for all women, regardless of their ethnicity, are: allowing the women to be accompanied by a relative in the delivery room ,and giving women the option to choose the position of their delivery. Quisaguano Mora also finds that the implementation of the

CAC guidelines puts in evidence the power dominance of medical personnel, with respect to traditional midwives and patients. Quisaguano Mora concludes that, although the institutionalization of culturally adequate childbirth practices within the biomedical system can be considered a symbolic achievement, there is still discrimination that pervades the relationships between health personnel and indigenous women. In this sense, some of the culturalist discourses still fail to incorporate a participatory approach in which indigenous women become key actors within the struggle of dominant forces that influence policy. Therefore, this dissertation takes into account dominance structures and discrimination components that may influence the effectiveness of implementing culturally adequate maternal health services.

Lastly, after conducting a pilot project of cultural adaptation of health services (HACAP) in Tungurahua, with positive anecdotal results, the Ministry of Health (MSP) with URC designed a more rigorous study in 2006 to assess the effects of the cultural adaptation of childbirth services on patient satisfaction (Hermida, González, Fuentes, Harvey, & Freire, 2010). The study was conducted in four Ecuadorian provinces located in the highlands/Sierra region of the country. Two health centers with similar characteristics in each province were chosen and then assigned as treatment or control units. The implementation of treatment of the HACAP model started in 2007 with 3 participatory workshops. In these workshops stakeholders identified and implemented the adaptation of maternal health services in the following areas: interpersonal relations, allowing the presence of partner or other family members in the delivery room, freedom to choose the position at childbirth, provision of culturally adequate foods and allowing herbal and medicinal teas-beverages after childbirth, provision of information, and allowing mothers to take the placenta after childbirth. The researchers conducted a baseline survey about the satisfaction with maternal health services from December 2006 to February 2007 (362 people were surveyed), and then conducted 4 waves of follow-up surveys in 2007-2008.

The Hermida et al. study showed that after the implementation of culturally adequate services, the satisfaction with certain aspects of quality increased significantly in treatment hospitals (Dovey &

Ransom, 2009). For instance, the presence of family members during delivery increased from about 16% to nearly 43% in treatment locations, while it only increased from 5% to 17% in control hospitals. In addition, in treatment hospitals after the intervention, the reported satisfaction with the clothing worn during delivery increased from one third to two-thirds, the level of satisfaction with room temperature increased from 30% to 50%, and satisfaction with food given at the hospital increased from one third before the intervention to 50% after the intervention (Dovey & Ransom, 2009). Although Hermida's et al. paper does not explicitly analyze the differences in the changes between treatment and control groups from 2006-2008, the data provided in the graphs allow the readers to infer the difference-in-difference effect (yet, the statistical significance of these differences could not be determined with the data reported in the study). For instance, the results show that the increase in patient's satisfaction with the delivery room temperature, and with the food was 4 and 26 percentage-points higher, respectively, than the increase in control hospitals from baseline to the last follow-up survey. In addition, while the proportion of women that intend to continue choosing the hospital as the place for the next baby delivery decreased in the control group by 6 percentage-points; this same indicator increased by 9 percentage-points in treatment group. In sum, although there is some evidence of improvements in patients' satisfaction when culturally adequate services were provided in Ecuador, there has not been an assessment to date of whether the provision of culturally adequate maternal health services affects the proportion of institutional child deliveries and/or maternal mortality rates in Ecuador.

Gaps in previous research

Although the previous empirical studies reviewed in this chapter may not be comprehensive in coverage, the reviewed articles (especially Evan's (2013) research review and Coast's et al.(2014) systematic mapping) suggest that there are important gaps in research on the effects of culturally adequate child delivery on maternal and infant mortality.

First, there is a lack of research on the direct effect of culture on maternal mortality. There is a considerable number of studies in different regions of the world that aim to determine which factors

are associated with institutional child delivery, and there seems to be some evidence that supports the claim that culture plays an important role in the choice and access to skilled care child delivery. Yet, as Evans, citing other authors indicates, "Culture has a direct and profound influence on the behavior of mothers and their care-givers during pregnancy, but there is a lack of research about the direct effect of culture in maternal mortality" (Thaddeus & Maine 1994; Kyomuhendo 2003; Thaddeus and Nangalia 2004; Geller et al. 2006; Gil-Gonzalez et al. 2006; Piane 2009; Sibley et al. 2009; cited in Evans 2013, p. 491).

Second, studies focusing on Latin American countries, and studies focusing specifically on Ecuador, have not assessed the effect of culturally adequate maternal services on maternal and child mortality rates. The reviewed studies provide important insights on the effects of culturally adequate maternal health services on patients' satisfaction (MSP and URC) and proportion of institutional deliveries (Gabrysch et al. 2009), but there is a gap in the research about the effects on maternal and child mortality rates. Moreover, none of the studies assessing the effects of cultural competence on health outcomes covered the population of all Ecuadorian provinces.

In addition, the reviewed studies in Coast et al.'s (2014) systematic mapping consisted of descriptive, or observational quantitative and/or qualitative studies with several threats to internal and external validity of their findings. None of the studies included a pre and post analysis with a comparison group, very few studies used a mixed-methods approach, and most of them focused only on one specific locality within a country. As Coast et al. explain, their systematic mapping shows that there is "a critical need for better documentation of interventions, with an emphasis on lower-income countries, and better study methods to evaluate the ways in which cultural factors can be systematically mainstreamed into programs to increase maternity care service use" (Coast et al. 2014, p. 14). Thus, there is only relatively weak or anecdotal evidence about the effects of culture on maternal mortality. As Evans explains in her systematic review, although the influence of culture on childbirth has been accepted and extensively studied in the social sciences and anthropology, the direct effect of culture on maternal mortality has been examined only cursorily

(Evans 2013). Therefore, there is a clear need for careful research about the ways culture influences maternal health behavior and affects maternal mortality.

Closing remarks

This chapter began with an overview of the theory and relevant research about how culture influences health access and health outcomes and about conceptual frameworks regarding how culturally adequate childbirth practices might influence birth outcomes. The literature reviewed indicates that there is a considerable amount of evidence that culture has an influence on healthcare access and outcomes through several mechanisms. In addition, this chapter reviews many scholars who have contributed to rich theory that highlights the importance of cultural competence in health care, and its potential benefits in reducing racial and ethnic health disparities. Also, the concepts of medical pluralism and interculturalism, as seen in Latin American literature, reinforce the arguments in favor of cultural competency in health.

The reviewed studies converge on viewing maternal mortality as an event that occurs as a result of the interplay of social, environmental, cultural, and medical factors. Thus, keeping in mind the complexity of the issue, this dissertation focuses only a portion of these factors (mainly the cultural factors) in order to uncover how culturally competent services may affect the quality and access to institutional delivery services in Ecuador, which in turn (according to several reviewed frameworks) would affect maternal and child mortality rates. The literature review shows that there are several frameworks and models to draw upon to conceptualize cultural competence in healthcare. Moreover, the vast literature on cultural competence in healthcare, in addition to the specific frameworks that discuss the relationship between culturally competent childbirth services and maternal health outcomes (e.g. Evans (2013) and Thaddeus & Maine(1994)), provides a theoretical grounding and motivation for this dissertation's research on cultural competence.

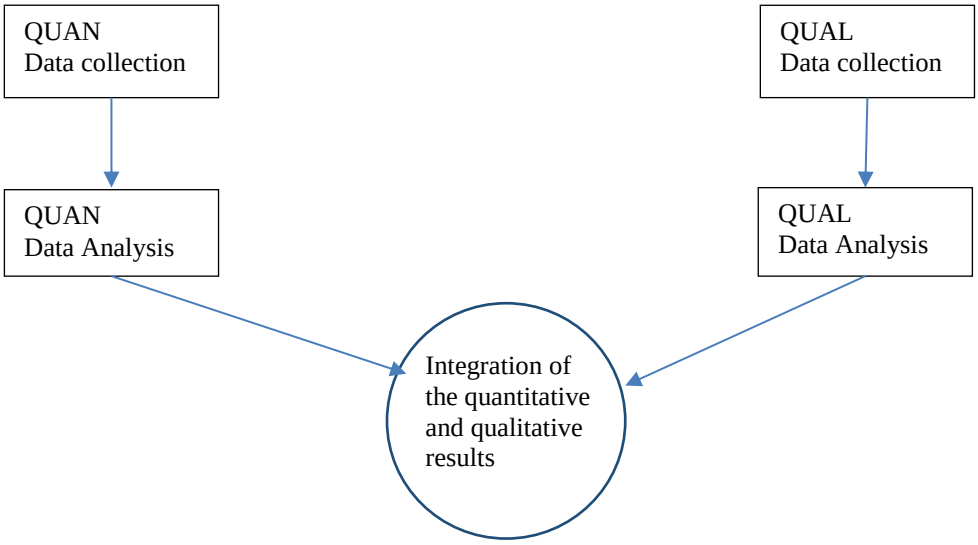
Chapter 3: Methodology

Introduction

This dissertation employs a mixed methods approach to address two research questions related to cultural competence in childbirth services in Ecuador. Quantitative and qualitative methods were used to address the research questions, and help to overcome limitations that are inherent to quantitative and qualitative approaches when applied separately.

A convergent parallel mixed methods design was used to address the research questions dealing with cultural competence in childbirth services in Ecuador. Quantitative and qualitative data were collected and then the results were integrated to answer the research questions. Figure 3.1 summarizes this approach and is explained in more detail in the next section. It is important to mention that this dissertation gives equal importance and weight to its quantitative and qualitative components, as they contribute to different aspects of the study. Table 3.1 summarizes the research design and provides an overview of the data sources, and methods related to each research question.

Figure 3.1: Procedural diagram: Convergent parallel design used to address research questions 1.a and 1.b.



Adapted from (Creswell & Clark, 2011)

The research design presented in this chapter addresses the gaps in research about the effects of culture on maternal mortality, the disparities in institutional child delivery between indigenous and

non-indigenous populations, and the recent Ecuadorian policies to provide culturally adequate childbirth public health services. The overall purpose of this dissertation is to identify the main factors that influence institutional child delivery, the effects of culturally adequate childbirth practices, and reflect about the ways to adapt evaluation to understand the underlying mechanisms that are related to culture and health services and outcomes. Therefore, this chapter first discusses the qualitative data sources, data collection and data analysis techniques used to address both research questions, and then provides a description of the quantitative data analysis techniques used to address each research question. Next, this chapter presents a discussion of the potential limitations of this study. Lastly, this chapter provides a brief overview of the literature regarding the role of cultural competence in evaluation, and describes the main frameworks that provided guidance to the way this study was conducted.

Table 3.1: Research Design Matrix

Research Question	Method			Data Sources
	QUAN	QUAL	Mixed	
1.a. What are the main factors associated with the choice of institutional delivery in a multicultural developing country like Ecuador?	Cross sectional non-experimental analysis of the determinants of institutional child delivery or delivery with skilled professional by ethnic auto-identification (post-test with comparison)	Thematic analysis of interviews at different levels	QUAN+QUAL	ECV survey 2013/2014 Interviews
1. b. To what extent does the availability of culturally adequate childbirth services improve: the proportion of institutional deliveries, health outcomes (maternal mortality rates) and perceptions of health care in Ecuador?	i) Longitudinal analysis with comparison group (diff-in-diff): maternal mortality rate and proportion of institutional deliveries, before and after implementation of culturally adequate facilities. ii) Segmented regression analysis at the canton and province levels ii) Linear Probability Model to assess effects on the probability of institutional delivery	iv) Thematic analysis of interviews at different levels	QUAN+QUAL	i) and ii): INEC Vital Statistics 2002-2014, MSP hospital data on policy implementation iii) ECV 2013/ 2014 iv) Interviews

Qualitative Component

Qualitative Data Sources and Population of Interest

While the quantitative analysis used data that is representative at the national level, due to time and resource constraints, this study's qualitative component focused only on one particular indigenous population in Ecuador, the Shuar. The Shuar people are the second largest indigenous nationality in Ecuador (7.8% of the indigenous population), and have a population of 79,709 people, according to INEC's 2010 Census. The Shuar people mainly reside in Ecuadorian Amazon region provinces such as Morona Santiago (78% of the Shuar population) and Zamora Chinchipe.

The Shuar indigenous nationality was chosen as this dissertation's population of interest due to several reasons. First, the Shuar people have a large population which is mainly concentrated in one province (78% of Shuar live in Morona Santiago). Therefore, the conclusions can be considered as representative of the population of the province. Moreover, it was easier to travel within one province to conduct the fieldwork. Second, the Shuar people keep and maintain many of their cultural aspects and traditions (Garcés Dávila 2006, 16) since the geographic location of some Shuar indigenous communities (which are often far from road access) has kept some communities relatively isolated from social and economic dynamics at the national and international levels (Garcés Dávila, 2006). In addition, the Shuar people's exposure to mestizo population had been less frequent and less constant[6] before the creation of the *Centro de Reconvención Económica del Austro* in 1952, which begun a colonization initiative of landless mestizo farmers to lands in the Amazon region. A third reason is for convenience, since the researcher's husband had introduced her to the president of the Shuar Federation (FICSH) in order to ask permission for the field work. A purposive sampling method was used to interview Shuar indigenous women, and public health officials. In total, 23 semi-structured interviews in three sites in the Ecuadorian Amazon region (in

[6] The first constant contacts of Shuar people with mestizo population begun in the XIX century though Salesian missions (Garcés Dávila 2006, 51).

Morona Santiago) and Quito were conducted using stratified purposive sampling as follows:

- 13 interviews with Shuar indigenous mothers who either gave birth at home or at a health institution before and after the culturally adequate services were available near their place of residence. At least 1 women of each category at each of the 3 sites: 13 women in total (including 2 family members), and 1 family member man (Total: 14 interviews).
    - 6 interviews in Sucúa, Morona Santiago, a canton in which culturally adequate childbirth services have been available since 2008: 2 women who gave birth at home (1 before 2008 and 1 after 2008), and 2 women who gave birth at Sucúa's public hospital. In addition 1 family member woman (who gave birth at home) and 1 male family member.
    - 5 interviews in Santiago de Méndez, Morona Santiago, a canton in which culturally adequate childbirth services have been available: 2 women who gave birth at home (1 before and 1 after the services were available), and 2 women who gave birth at Méndez's public hospital. In addition, one older woman (family member) who delivered at home and hospital.
    - 3 interviews in Macas, which is Morona Santiago's capital city. Since there are no culturally adequate childbirth services available in Macas, only 2 women of reproductive age were interviewed (1 woman who gave birth before 2008, and 1 woman who gave birth 12 months before the field research). In addition, 1 older woman (family member), who gave birth at home, was interviewed.
- 7 interviews with health providers: doctors and nurses/obstetricians (at least 1 of each category at each site).
- 3 interviews with Ministry of Public Health staff: Director of Intercultural Health, Director of Statistics, Manager of Maternal Mortality Reduction Program.

The interviews were conducted in Spanish and the questions were geared to explore how Shuar women perceive culturally competent childbirth services, how and why they decide upon the place

where they are going to deliver their babies, and whether the available culturally adequate services improve/affect their health outcomes and perceptions of quality of health care. The interviews included questions to address all of the research questions proposed in this dissertation. Therefore, these interviews are the main data source for the qualitative component of both research questions.

Qualitative Data Analysis

The qualitative data analysis component to address questions 1.a and 1.b consisted of transcribing and coding the data collected through semi-structured interviews[7] with Shuar indigenous women (and family members) who gave birth at home or at health facilities, and with medical personnel at the Macas, Méndez and Sucúa public hospitals. The interview transcription was conducted in Spanish, and the data coding and analysis was conducted in English. Some of the steps that were taken to ensure the identity of respondents included erasing names from all transcribed data and saving all qualitative data in a password-protected electronic folder. The interview questions were designed to examine the main factors that influence indigenous women's decisions to deliver their babies at home versus at a health care institution, to understand their views and traditions related to childbirth, and to assess any potential effects of the availability of culturally adequate childbirth services on the interviewees' perceptions about health care. The analysis categorized the findings and discerned common patterns across the data collected via interviews.

Prior to the qualitative data analysis, the researcher listened to all the audio recordings and developed an initial coding framework using key themes based on the literature review and common themes that emerged during the interviews. The researcher coded the data in segments by the three different interview sites. Approximately, 45 codes ("nodes" in NVivo) were developed and organized into sub-categories and 5 main categories. In some cases, multiple codes were applied to the same portions of text to allow for joint queries to be run in NVivo at the second stage of analysis. Table A.1 in the Appendix B explains the main themes, sub-themes, and codes used to

[7] The interview questions are described in the interview protocol located in Appendix A.

analyze the qualitative data, and the relationship of these themes with each research question. The second stage of the analysis consisted of using the matrix coding query function in NVivo to analyze common patterns across different themes and interviewee characteristics (e.g. perceptions of hospital births from interviewees at different sites). Confirming and disconfirming evidence was analyzed within the sub-categories created by matrix coding.

In sum, the qualitative component was used for triangulation and complementarity purposes. As Greene (2007) explains, mixing methods with the purpose of triangulation means seeking convergence, or corroboration, of results from multiple methods (Greene 2007, 100). This is why the results from the quantitative and qualitative components is compared in order to examine convergence in the findings. In addition, mixing methods for complementarity purposes involves tapping into different facets or dimensions of the same complex phenomenon, and seeking broader, more comprehensive, and deeper understanding of the issue (Greene, 2007).

Quantitative Component

This subsection describes the data sources and quantitative techniques employed to address each of the research questions.

The first question (question 1.a.) is: What are the main factors associated with the choice of institutional delivery in a multicultural developing country like Ecuador?

This question is motivated by WHO statements and research findings (e.g. Chowdhury et al. 2007) that indicate that the main causes of maternal mortality are preventable if treated by skilled professionals. In order to answer this question, a convergent parallel mixed methods design was used (as shown in Figure 3.1). The convergent parallel design consists of collecting and analyzing two separate strands of qualitative and quantitative data in a single phase, merging the results, and then looking for the convergence or variation in the data (Creswell, 2015). For the quantitative data component, a cross sectional observational analysis of the determinants of institutional child delivery (and delivery with skilled professionals) by ethnic auto-identification (post-test with comparison) was conducted. The qualitative component consisted of a thematic analysis of

interviews with Shuar indigenous women and medical personnel.

For the quantitative component, a cross-sectional observational (post-test with comparison) analysis of the determinants of institutional child delivery, by self-reported ethnicity was conducted using data from INEC's living conditions ECV survey (2013-2014). This analysis is informed by two components of Thaddeus and Maine's theory of the 'three delays' -delay in deciding to seek care and delay in reaching care - which explains the phases in which women could potentially be prevented from access to maternal care.

Data Sources and Population of Interest

The data source used to address the quantitative component of this question is the Ecuadorian living conditions survey (ECV) of 2013-2014. The survey is nation-wide, thus provides valid inferences for the Ecuadorian population at the national and province level. INEC explains that the purpose of this survey is to have a more complete instrument than traditional household surveys in order to be able to analyze the population's living conditions, with a special focus on health, nutrition, education, training, labor market, family consumption, and access to basic services (INEC, 2015). This survey is representative at the national urban and rural level, and the sample has been selected to permit valid inferences at the regional and province level. The survey data of ECV's sixth round was collected from November 2013 through October 2014, and contains information from 28,970 households. The survey contains a health module which includes questions about childbirth place, skilled childbirth, and perceptions of quality of childbirth services.

Quantitative Analysis

With regards to the data analysis, Probit and Linear Probability Model regression analyses were conducted using the dichotomous variable of whether the woman delivered at a health-facility (or not), as the dependent variable. The model analyzes whether ethnicity has a statistically significant association with the dependent variable, and analyzes the effects of other potential determinants including socioeconomic, demographic, reproductive health choices, number of children, educational characteristics of the individual, and health system characteristics at the province level.

The variables included in the regression analysis are, in part, based on Moyer and Mustafa's (2013) systematic review, and on Exavery et al. (2014), Ebuehi and Akintujoye (2012), Sychareun et al. (2012), and Abeje's at al. (2014) empirical studies about factors associated with the choice of place for child delivery. In addition, variables included in Stokoe's (1991) study of maternal mortality determinants, along with health system (or supply-side) characteristics outlined in Muldoon's et al. 2011 study were be included as controls. Like the Muldoon et al. study, this study aimed to control for available health system variables from a portion of WHO's conceptualization of six building blocks of a health system[8] (World Health Organization, 2007) by merging ECV data with administrative data, at the province level, on health resources published by INEC annually.

The complete model takes the following form:

Equation 1: $Y_i = \beta_0 + \beta_1 Indigenous_i + \beta_2 Afroecuadorian_i + \beta_3 Education_i + \beta_4 Married_i + \beta_5 Age_i + \beta_6 \#children_i + \beta_7 Head\ of\ household_i + \beta_8 Poor_i + \beta_9 Age\ First\ Child_i + \beta_{10} Rural_i + \beta_{11} Public\ Health\ Insurance_i + \beta_{12} Private\ Health\ Insurance_i + \beta_{13} Know\ LMYGAI_i + \beta_{14} OBGYN\ checkup_i + R_i + H_{ip} + \varepsilon_i$

Yi is a dummy variable equal to 1 if the woman *i* gave birth to her last child at a health care institution (public or private health care center/hospital), and 0 if otherwise. The Health system controls (H_p) are at the province level *p* in which individual *i* resides. These health system controls include human health resources (physician density and obstetrician density in individual *i's* province of residence), and other health system relevant controls, such as the number of hospitals in the province *p*. Five separate specifications of the model in equation 1 were run in order to determine how the coefficient of interest (β_1) changed when including individual characteristic controls (educational attainment, marital status, age, number of children, household headship, poverty status, and age when the woman had her first child), geographic controls (rural and geographic regions – R_i), individual health controls[9] (public or private health insurance, knowledge

[8] 1) health service coverage, 2) human health resources, 3) health information systems, 4) medical products, vaccines and technology, 5) health financing, and leadership and governance.

[9] The model would have ideally included Antenatal Care controls, but the information about antenatal checkups was only available for respondents that were currently pregnant.

about the Free Maternity Law-LMGYAI, a dummy variable of whether the woman had ever gone to an OBGYN checkup), and health system controls at the province level (obstetrician rate, doctor rate, and number of hospitals).

The second question (question 1.b) is: To what extent does the availability of culturally adequate childbirth services improve the proportion of institutional deliveries, health outcomes (maternal mortality rates) and perceptions of health care in Ecuador?

As McCarthy & Maine's, Stokoe's, and Muldoon's et al. studies indicate, maternal mortality occurs as a result of the interplay of social, environmental, cultural, and medical factors. Therefore, keeping in mind the complexity of the issue, this dissertation focuses only a portion of these factors (mainly the cultural factors) in order to uncover how culturally competent services may affect the quality and access to institutional delivery services in Ecuador, which in turn could affect maternal and child mortality rates. Cultural differences play a critical role in the provision of healthcare. Therefore, the methods chosen to answer this question are based on the proposed integral model (figure 2.6), on and the premise that cultural competence in healthcare service delivery is an important factor that needs to be considered in order to reduce disparities and improve the quality of services (Leininger, Flores, Brach & Fraserirector, Anderson).

In order to answer this question, a convergent parallel mixed methods design was conducted, as shown in Figure 3.1. The qualitative component's results were used to complement, triangulate, and add more depth to the results of the quantitative component. This section first describes how the treatment variable is operationalized, and then describes the distinct quantitative data analysis techniques that were employed to assess the effects of the availability of culturally adequate childbirth services on: the percentage of institutional deliveries at the canton level, the probability of delivering at a hospital (at the individual level), and on Maternal Mortality Rates at the province level.

Operationalization of the treatment variable

First, it is important to clarify how 'culturally adequate services', which is used as a treatment variable, is operationalized in this study. Although cultural competence in health is a

multidimensional concept, e.g. Campinha-Bacote's framework of cultural competence process includes various dimensions which would ideally require a complete analysis of its components, this dissertation focused only on certain aspects of the concept due to time, resources, context-specific, and data-availability constraints. This dissertation is mainly focused on the adaptation of delivery rooms. Specifically, the concept is operationalized as the availability, within the province or canton boundaries, of at least one delivery room that is culturally adequate according the Ministry of Public Health's 2008 guidebook with *Technical Guidelines for Culturally Adequate Child Delivery Services.* The unit level of analysis for the maternal mortality portion –the province – was chosen due to limitations regarding the data on maternal deaths[10], whereas the effects on institutional deliveries are assessed at the canton level.

According to a technical analyst at the National Direction of Intercultural Health (DNSI) of the MSP, public health facilities report information about culturally adequate delivery rooms and services to the DNSI of the MSP for monitoring purposes three times a year. The DNSI has information about the number of culturally adapted/adequate delivery rooms in each province since 2013. As mentioned in Chapter 1, according to MSP information, by January 2015, 59[11] public health facilities (basic hospitals and type C health units) were equipped to service culturally adequate child deliveries. Nevertheless, the DNSI does not have readily available information about the dates in which these 59 public health facilities started offering culturally adequate childbirth services, nor about personnel training in this topic[12]. Therefore, there was a need to collect data about the implementation dates from each one of the 59 public health facilities with culturally adequate childbirth services in the list provided by the DNSI. These data was collected via short

[10] In particular, if the data were disaggregated by cantons (which is a smaller geographic disaggregation), the number of maternal deaths is too low to make valid inferences or is non-existent

11 By 2013, 66 basic hospitals and type B health facilities had self-reported the availability of culturally adequate childbirth services. Yet, through a data cleaning process, the technical team removed 7 cases which had incorrect information.

[12] The DNSI indicated that they have started monitoring the adaptation of delivery rooms since 2014 in order to assess their compliance with the 2014 *Guía de Especificaciones Técnicas para UTPRS Interculturales*

phone call interviews with personnel from each public health facility and also by reviewing published studies, and other documents (such as the 2008 technical guidelines for culturally adequate childbirth services, Arteaga et al., and a report by CARE and MSP) which indicate the years when the health facilities were adapted. During the data collection process, I found that 5 health facilities from the original list were not yet adapted (intercultural childbirth services are not available), and 3 health facilities had only started to provide culturally adequate services in 2016. So, this dissertation considers 51 health facilities as 'culturally adapted' by 2015. These "treatment" data was then sent to the DNSI to be compared with the latest list of available culturally adequate facilities.

Table 3.2: Provinces with at least one public health facility adapted to offer intercultural childbirth services by 2015

Province	Year when first available	# of medical facilities with intercultural childbirth services by 2015
Cañar	<2000	1
Sucumbíos	2005	2
Morona Santiago	2006	2
Imbabura	2008	2
Orellana	2008	2
Chimborazo	2008	3
Tungurahua	2009	1
Loja	2010	1
Azuay	2010	7
Pichincha	2010	7
Esmeraldas	2012	1
Santa Elena	2012	3
Guayas	2012	11
Bolivar	2013	2
Los Rios	2013	3
Cotopaxi	2014	2
Santo Domingo	2015	1
TOTAL		**51**

Based on the data collected on self-reported availability of culturally adequate childbirth services in each one of the 51 public health facilities, the first operationalized variable of cultural adequacy of childbirth services is a dichotomous variable of whether there is at least one public health facility with culturally adapted equipment/infrastructure or self-reported availability of intercultural childbirth services in each Ecuadorian province in each year. Table 3.2 indicates that, by 2015,

there were 17 provinces (46 cantons) with at least one medical facility with intercultural childbirth services. Yet, due to the data available on the dependent variables (MMR at the province level and proportion of institutional deliveries at the canton level), this study only considers the 15 provinces (29 cantons) with intercultural childbirth services by 2013. The table also shows that most medical facilities were adapted after the publication of the 2008 technical guidelines for culturally adequate services by MSP.

A second measure to operationalize "cultural adequacy of childbirth services", which is used as a robustness check for possible measurement errors and for sensitivity analysis, is based on a 2014 implementation assessment of the level of adequacy of delivery rooms in the 51 public health facilities with culturally adequate services. In 2014, the United National Population Fund (UNFPA) and MSP funded a consultancy project to create a baseline of the level of adequacy of culturally adequate delivery rooms in Ecuador. The study included surveys, interviews and field research with visits to each one of the 59 public health facilities with culturally adequate childbirth services. This study developed a 19 item checklist as an instrument to operationalize the equipment, infrastructure and resources a delivery room requires to meet MSP's guidelines for culturally adequate childbirth services. This checklist was validated by the National Direction of Intercultural Health of MSP (Brandão & Moral, 2014). Table 3.3 describes the results of their study, indicating the proportion of delivery rooms that met the requirements for each one of the items in the checklist. The first 10 items in the checklist, which are in bold, are regarded by the study as the minimal basic items a delivery room should have in order to provide culturally adequate childbirth services.

Therefore, the second measure of culturally adequate childbirth services is based on Brandão and Moral's (2014) study. Assuming that the level of adequacy remained constant since the health facilities started providing culturally adequate childbirth services, the individual scores of every item in Brandão and Moral's checklist were combined to create a Minimum Adequacy Score[13] for

[13] Minimum adequacy score which indicates the % of the 10 minimum adequacy items listed in Brandao & Moral's study

each health facility. Based on this score, a second operationalized measure of culturally adequate childbirth services takes a value of 0 or 1 for each province to depict the whether the province has a public health facility with culturally adequate childbirth services that meet at least 50% of the minimal basic items for adequacy, and takes a value of 0 if there are no public health facilities in the province that offer these type of services.

Table 3.3: % of delivery rooms that meet the 19-item checklist of culturally adequacy

	Inputs/ equipment	% of delivery rooms that meet standard
1	**Fabric suspended from the ceiling**	29%
2	**Fitness ball for dilation**	31%
3	**Clip at the roof (for hanging cloth)**	38%
4	**Floor "gooseneck" lamp**	38%
5	**Blankets**	43%
6	**Stool to support childbirth in squatting position (for staff)**	48%
7	**Floor pad (for vertical and squatting delivery positions)**	49%
8	**Grab bars for vertical delivery**	59%
9	**Hot and cold water dispenser**	74%
10	**Low side table (to support personnel)**	84%
11	**Lighting with warm light**	9%
12	Blinds or curtains in good condition (on windows)	31%
13	Bed without headboard	34%
14	Birthing stool (Dutch chair)	38%
15	Chair for family member/companion	47%
16	Wall tiles	52%
17	Warm colored walls	55%
18	Air conditioning system (temperature 25 °C)	74%
19	Hot Water Bottle (for breasts)	88%

Adapted from Brandão and Moral, 2014 (Consultancy project for MSP and UNFPA)

Lastly, it is important to mention that the operationalization of available 'culturally adequate childbirth services' as the adaptation of delivery rooms according to MSP's 2008 *Technical Guidelines for Culturally Adequate Child Delivery Services* is supported by Brach & Fraserirector's (2000) conceptual model of cultural competency's potential to reduce racial and ethnic health disparities. As mentioned in chapter 2, the authors indicate that the adaptation of administrative and organizational accommodations are techniques that are often used to increase cultural competency, and the adaptation of physical environments can make them more welcoming to minority group members (Brach & Fraserirector, 2000). Yet, it is important to acknowledge that this operationalization of cultural competency has important limitations since it does not encompass

medical personnel's attitudes nor training.

Health outcome 1: Percentage of institutional deliveries at the canton-level

The first quantitative data analysis technique consists of a difference-in-difference model using annual canton-level panel data of the percent of institutional births in cantons with and without culturally adequate facilities from 2004-2013 (2,160 data points from 216[14] cantons and 10 years).

Data sources

The data used for this part of the analysis is administrative data published by INEC regarding the number births registered each year (*Bases de datos de nacimientos y defunciones*). The raw data, which was downloaded from INEC's website, was cleaned and merged to obtain canton-level information on the proportion of institutional births. The aggregated pooled-cross sectional data was used as a canton-level panel database for various points in time.

Method of Analysis

Brach and Fraserirector's model and Anderson's et al. framework served as a starting point for tracking the theory of change behind the provision of culturally adequate maternal health services in the Ecuadorian context, which was then incorporated into the proposed integral model described in chapter 2. One of the types of cultural competence interventions in Anderson's model are culturally-specific healthcare settings. The theory of change of these models (see Figures 2.2 and 2.3) indicates that the availability of such culturally adequate settings (its operationalization is described above) may produce intermediate outcomes, such as changes in patients and clinicians' behaviors. These changes can lead to more appropriate provision of quality services, which lead to improved outcomes for minority group members, and, finally, lead to reduced disparities. The following model assesses whether the presence of culturally adequate delivery settings in public hospital within a canton has an effect on the proportion of women that deliver their babies in a hospital.

Equation 2: $PID_{ct} = \beta_0 + \beta_1 Culturally\ Adequate_{ct} + \beta_2 public\ hospital\ rate_{ct} +$

[14] By 2010, Ecuador had 221 cantons, which belong to the 24 provinces. Since Galapagos was not considered in the analysis, and 2 cantons did not have complete data for the period of analysis, the data used for the analysis only contains information of 216 cantons.

$\beta_3 \%\ births\ registered\ 1\ year\ later_{ct} + \gamma_t + a_i + u_{ct}$

PID_{ct} is the percentage institutional deliveries[15] in canton *c* at time *t*. The coefficient of interest is β_1, which depicts the effect of the policy on the % of institutional deliveries. The canton fixed effects (a_c) control for factors that affect institutional deliveries and that differ across cantons but that are constant over time for each canton. On the other hand, the time fixed effects (γ_t) control for things that affect the percent of institutional deliveries and that change over time, but that are constant across cantons, such as national health policy or national level economic shocks, e.g. free maternal health care law -LMGYAI and the 2008-2009 economic crisis. In addition, the specified model also controls for the number of public medical facilities rate at the canton level, since this time-varying canton-level health system characteristic would likely affect the percentage of institutional deliveries.

A second method of analysis to assess the effects on the % of institutional births at the canton level consists of a Segmented Regression Analysis approach which allowed to analyze whether there are any level and/or trend changes in the percentage of institutional deliveries in specific cantons with at least one public medical facility providing culturally adequate childbirth services Using time series data on the percentage of institutional deliveries and the year of implementation of intercultural childbirth services in each of the 12 cantons, the following segmented regression analysis model was conducted using STATA:

Equation 3: $PID_{ct} = \beta_0 + \beta_1 time + \beta_2 intervention + \beta_3 post\ slope + \varepsilon_{ct}$

Where PID_{ct} represents the % institutional deliveries as the outcome variable in canton *c* at time *t*; time is a continuous variable indicating time from the start of the study up to the end of the period of observation; intervention is coded 0 for pre-intervention time points and 1 for post-intervention time points in each canton, and post-slope is coded 0 up to the last point before the intervention

[15] The number of institutional deliveries includes births that are registered the following year: # of institutional births in year t =(#of institutional births on year t registered on year t)+ (#of institutional births on year t registered on year t+1). This correction was applied to the raw data published by INEC in order to mitigate for the potential bias of only considering births occurring at health institutions, since they might be more likely to be registered on the same year of birth.

phase in each canton and coded sequentially from 1 thereafter. In this model, β_1 estimates the baseline trend or growth rate in the % of institutional births, independently from the intervention; β_2 estimates the immediate impact of the intervention (change in level) in the outcome of interest after the intervention; and β_3 reflects the change in trend after the intervention.

Health outcome 2: probability of delivering at a medical facility

Using individual level data from the Survey of Living Conditions (ECV) 2013-2014, a Linear Probability Model analysis was conducted to assess the extent to which the availability of culturally adequate services affects the probability of delivering a baby at a hospital.

Data sources

The data source for this analysis is the Survey of Living Conditions ECV 2013-2014 survey data, merged with data provided by the Ministry of Public Health about the places where culturally adequate delivery services are available, along with primary data about the dates when delivery rooms were culturally adapted. The data collection and cleaning procedure consisted of downloading the ECV survey database, selecting a sub-sample of women of reproductive age, and merging this dataset with canton-level data from MPH (2004-2014) on whether the canton of residence of the survey respondent had at least one hospital with culturally adequate childbirth services.

Method of Analysis

The Linear Probability Model (see equation 4) estimates the effect of the availability of a culturally adapted delivery room in at least 1 public medical facility[16] in the respondent's canton of residence ($Treatment_{ct}$) on the probability of women delivering their last child at the hospital instead of at home. The specified model controls for demographic and socioeconomic characteristics that affect the probability of delivering at the hospital. These control variables are based on the determinants analysis conducted for Question 1.a. In addition, the model includes canton fixed-effects which control for all time-invariant differences between the cantons where survey respondents live, so the

[16] Public hospitals and "Type C" public medical centers.

estimated coefficients of the fixed-effects models will not be biased by omitted time-invariant characteristics at the canton level.

Equation 4: $HB_{itc} = \beta_0 + \beta_1 Treatment_{itc} + \beta_2 Indigenous_i + \beta_3 Afroecuadorian_i + \beta_4 (Indigenous_i * Treatment_{itc}) + X_i + a_c + u_i$

Where HB_{itp} is a dummy variable equal to 1 if the woman's (*i*) canton of residence (*c)* has at least 1 culturally adapted delivery delivered room and she delivered her last child after the adaptation of the delivery room (time *t*), and 0 otherwise[17]. The independent variables include ethnicity and an interaction term between treatment and a dummy variable for indigenous women. Xi, is a vector of sociodemographic and socio-economic controls at the individual level, and a_c represent canton fixed effects. An interaction between ethnicity and the availability of culturally adequate services in the province are included in order to assess whether the availability of culturally adequate services had different effects on different ethnic groups. The coefficient of interest is β_4, which indicates the differential effect of the availability of culturally competent childbirth services between indigenous and non-indigenous women. Lastly, the canton fixed effects (a_c) control for unobserved heterogeneity that is constant over time across cantons of residence.

Health outcome 3: Maternal Mortality Rates at the province level

The data analysis technique to determine whether the availability of culturally adequate services has an effect on Maternal Mortality Rates consists of a before-and-after analysis with a comparison group using annual province-level data of the maternal mortality rates in provinces with and without culturally adequate facilities from 2002-2014 (299 data points from 23[18] provinces and 13 years)..

Data sources

The data source is administrative data published by INEC about estimated births and deaths registered each year (*Bases de Datos de Nacimientos y Defunciones*). The raw data downloaded

[17] Treatment =0 for women who reside in non-treatment cantons, and for women who reside in treatment cantons but delivered their last child before the adaptation of the delivery rooms

[18] By 2010, Ecuador had 24 provinces. Since Galapagos was not considered in the analysis, the data used for the analysis only contains information of 23 provinces.

from INEC's website was cleaned and merged to obtain canton-level information on the proportion of institutional births, and number of doctors and hospitals. In addition, in response to a formal request, INEC provided a data set with the number of maternal deaths and maternal mortality rates at the province level for 2000-2015. The aggregated pooled-cross sectional data was used as a province-level panel database for various points in time.

Method of Analysis

Brach and Fraserirector's model and Anderson's et al. framework also served as a starting point for tracking the theory of change behind the provision of culturally adequate maternal health services in the Ecuadorian context. One of the types of cultural competence interventions in Anderson's model are culturally-specific healthcare settings. The theory of change of the proposed integral model (see Figure 2.6) based on these frameworks indicates that the availability of culturally adequate settings (its operationalization is described above) may produce intermediate outcomes, such as changes in patient and clinician behavior. These changes can lead to more appropriate provision of quality services, which lead to improved outcomes for minority group members, and, finally, lead to reduced disparities. The following model was analyzes to assess whether the presence of culturally adequate delivery rooms in a province (or canton) has an effect on Maternal Mortality Rates.

The fixed effects method is similar to the one described above and controls for time-varying province-level health system characteristics (# of public and private medical facilities).

Equation 5: $MMR_{pt} = \beta_0 + \beta_1 Culturally\ Adequate_{pt} + \beta_2 \%\ institutional\ deliveries_{pt} + \beta_3 \#private\ health\ facilities_{pt} + \beta_4 \#public\ health\ facilities_{pt} + \gamma_t + a_p + u_{pt}$

MMR_{pt} is the maternal mortality rate[19] of province *p*, at time *t*, while γ_t stands for time fixed effects, and a_p for province fixed effects. The coefficient of interest is β_1, which depicts the effect of the availability of at least 1 hospital with culturally adapted birthing rooms within the province. Following Evans' theory of how inaction and lack of use of care may affect maternal mortality, and

[19] Maternal Mortality Rate is defined by INEC as the number of maternal deaths (deaths occurring during 42 days after giving birth) per 100,000 estimated live births.

Thaddeus & Maine's (1994) framework of how the 'three delays' may affect MMR, the specified model includes the proportion of institutional deliveries in the province as a control variable.

The province fixed effects controls for factors that affect mortality rates and that differ across provinces, but that are constant over time for each province. Time fixed effects control for things that affect mortality rates and that change over time, but that are constant across provinces, such as national health policy or national level economic shocks, e.g. free maternal health care law - LMGYAI and the 2008-2009 economic crisis. Lastly, the health system controls included in the model account for changes in the number of public and private health centers available in the province across time.

Potential Limitations

There are some potential limitations in this research design that may be regarded as potential threats to measurement validity and authenticity, statistical conclusion validty, internal validity, and transferability of findings.

Measurement validity and Authenticity

There is a potential problem with the maternal mortality variable since some maternal deaths might not be reported. This could be a problem if the health facilities with culturally adequate services increase both facility delivery and increase reporting of deaths in a differential way. If that is the case, the effect of available culturally adequate facilities on maternal mortality might be confounded, and appear to have either a zero or negative effect. To mitigate this possible threat, the main dependent variable of the canton-level analysis (i.e. institutional deliveries) was constructed to reflect births occurring at home or hospital on a certain year, but that are registered on the following year.

Another threat to the validity of the maternal mortality analysis is related to availability to determine the exposure to "treatment". This is because the lowest level of geographic disaggregation for MMR is the province level (due to the low absolute number of maternal deaths).

So, it might be difficult to find effects of the availability of culturally adequate services in one or two of hospitals within a province since the province might be comprised of several cantons with and without intercultural childbirth services (this is a problem of exposure to "treatment" or dosage). In addition, province level MMRs are very sensitive to changes in the number of the maternal deaths that are registered in each province. So, other factors that may affect the number of deaths (such as how the deaths are categorized or classified as maternal deaths or other kinds of deaths) which are not related to the implementation of intercultural childbirth services can produce great variability in MMRs, and can confound the analysis.

A second problem regarding measurement validity is related to the operationalization of the treatment variable of 'culturally adequate childbirth services'. Due to limitations in available data, the operationalized variable (which reflects only the adaptation of the delivery rooms' equipment and infrastructure) does not include many dimensions of the concept of cultural competence, such as cultural awareness, skill, knowledge and cultural desire from the health personnel. In addition, there are some potential validity problems associated with the intervention not being fully implemented. Although the Ministry of Public Health (MSP) 2008 guidebook with Technical Guidelines for Culturally Adequate Childbirth Services should ideally be applied by all public hospitals, this is not the case. Moreover, there are substantial differences in how the cultural adaptation of childbirth services are being implemented in the 59 health facilities that have reported the availability of those services. These differences range from the level of adequacy in equipment and infrastructure, to the health personnel's cultural competency. Therefore, these limitations was taken into consideration throughout the analysis and is reflected in the conclusions.

In addition, there might be some measurement error in the "treatment" variable regarding the year when culturally adequate childbirth services were implemented. The primary data collection to build the "treatment" variable was conducted via short phone interviews with health personnel on the 59 medical facilities that had reported the availability of culturally adequate childbirth services by 2015. Since the variable is based on the responses by health personnel that were willing and

available to respond by phone, there may be issues of purposeful (respondent intentionally distorts facts to hide a problem) or accidental (faulty memory, especially when significant calendar time has elapsed) misrepresentation.

Lastly, there is also a measurement threat related to the qualitative component of the research. Specifically, social desirability/evaluation apprehension could be a potential threat if interviewees tell the interviewer what he/she believes the interviewer wants to hear with the aim of receiving approval or a desire to please. This limitation is partly overcome by the fact that some of the information provided by the interviewees was used to triangulate and complement results, and therefore there are multiple measures from different sources.

Statistical Conclusion Validity

There are some potential problems with the segmented regression analysis approach since this type of time-series regression analysis approach can be particularly sensitive to small sample sizes. Since there were only few cantons and provinces with data on at least 3 years prior and after the intervention, the results of the analysis are very limited due to the small number of data points. In addition, the segmented regression analysis models assume a linear trend in the outcome within each segment. Yet, this assumption may often hold only over short intervals and does not allow to non-linear patterns. In addition, unlike cross-sectional analysis methods, segmented regression analysis of time series data does not allow to control for individual-level covariates.

Internal Validity

An important potential limitation for the study is selection bias, which represents a threat to internal validity. This is because the observed effects in maternal mortality, institutional delivery and health care perceptions could be due to preexisting differences between the types of individuals/provinces/cantons in the "treatment" and comparison groups, rather than to the treatment or program experience. This may be a problem since the assignment of provinces/hospitals to comparison and treatment groups is not random, so the groups may differ in the variables being measured. There could be significant pre-existing differences between early

adopters of culturally adequate child delivery services and late or non-adopters. For instance, when comparing the proportion of indigenous population in "treatment" and comparison cantons, the cantons with at least 1 public health facility with culturally adequate services by 2013 have a higher proportion of indigenous population (23%) than the cantons without these services (11%). Thus, instead of the treatment being the cause of the observed effects, early adopters' characteristics may be the ones that cause the observed effects. This threat is in part addressed by the fixed effects model using panel data, which controls for unobserved heterogeneous factors across cantons that do not change over time, and for factors that change over time across for all cantons. Yet, the model does not control for factors that change differently over time across provinces. To mitigate this threat, the research design included the use qualitative data to triangulate the findings.

A specific threat to internal validity is related to the segmented regression analysis portion of this dissertation. Although this type of analysis is useful to understand changes in trends after the implementation of a policy, this approach has considerable limitations in its ability to infer causality. This is because, although this type of analysis allows to determine if there was a systematic shift in the outcome variable at and after a given time point, it does not identify the causal determinants of that shift (Lagarde, 2012). Therefore, the segmented regression analysis results are not used to infer causality, but to provide insights about the changes in trends in "treatment" cantons/provinces.

Transferability

Finally, results from interviews might not be transferrable to other indigenous populations. Nevertheless, this transferability issue can be overcome by focusing the research on the mechanism behind the effects instead of particular indigenous practices or beliefs.

The research design presented in this chapter addressed the gaps in research about the effects of culture on maternal mortality, the disparities in institutional child delivery between indigenous and non-indigenous populations, and the recent Ecuadorian policies to provide culturally adequate child

delivery public health services. This chapter described the data sources and methods that that were employed to address each one of the research questions. By employing a mixed-methods approach, the purpose of this study was to identify the main factors that influence institutional child delivery, and to assess the effects of culturally adequate childbirth practices. After describing the quantitative and qualitative analysis components employed in each question, this chapter also offered a discussion of the potential limitations to this study. The next section describes some important aspects about cultural competence in evaluation which were considered in this research design and throughout this dissertation's data collection and data analysis processes.

Cultural Competence in Evaluation: considerations for chosen methodology, validity and implications of findings

Having established the importance of assessing the relationship between culture and maternal and child health outcomes, it is important to reflect upon how the evaluation framework and methods used in this dissertation needed to be tailored to clarify the underlying mechanisms and theory of change of child delivery services in a multicultural context more fully. Therefore, this section provides a brief overview of the literature that explains the need to consider culture in evaluation and how this affects the choice of methods, the way the research is conducted, and the way data is analyzed. Cultural competence in evaluation is important since evaluation is based in theories that reflect implicit and explicit assumptions about how things work, and therefore are not value-free nor culture-free (American Evaluation Association, 2011). Although there are various definitions for the concept, Hood (2009) indicates cultural competence in evaluation can be defined as the development of programs, standards, criteria, and measures, so that they are relevant, specifically tailored, credible and valid for the unique groups and communities of focus (Hood, Hopson, & Frierson, 2015; Hopson, 2009).

The recognition of the importance of cultural competence in the evaluation field has increased in the past two decades. This increased recognition is evidenced by the growing literature on the

topic[20], the explicit statement on cultural competence in evaluation by the American evaluation Association (AEA), and also by the creation of the Center for Culturally Responsive Evaluation and Assessment (CREA) in 2011, among others. In addition, some authors have developed theoretical frameworks within the evaluation field, such as Cultural Responsive Evaluation (CRE) and Indigenous Evaluation Frameworks (IEF), which focus specifically on the importance of cultural competence in the evaluation process and centering evaluation in culture.

This section first provides a brief description of the growing recognition of the importance of cultural competence in evaluation and an overview of literature on culturally competent evaluation. Second, this section provides a review and a discussion of the concept of multicultural validity in evaluation and two important frameworks in evaluation theory that are relevant to this dissertation – Culturally Responsive Evaluation (CRE) and Indigenous Evaluation Framework (IEF).

Importance of Cultural Competence in Evaluation

AEA's 2011 statement on cultural competence is a milestone in the evolving process of recognizing the importance of cultural factors and cultural competence/responsiveness in evaluation. The statement is a reflection of the growing agreement that "cultural competence in evaluation theory and practice is critical for the profession and for the greater good of society" (American Evaluation Association, 2011) . The AEA statement explains that cultural competence is not simple mastery of certain skills nor a discrete status; cultural competence is regarded as a stance taken toward culture. AEA explains that cultural competence in evaluation is composed of several core concepts. First, since culture is central to political, social and economic systems, as well as to individual identities, "evaluation reflects culturally influenced norms, values, and ways of knowing—making cultural competence integral to ethical, high-quality evaluation" (AEA 2011, p. 1). Second, since there is a great diversity of cultures, being culturally competent in one culture does not mean being

[20] Hood, Hopson and Frierson 2015 indicate that a search on Google Scholar of the usage of the term "Culturally Responsive Evaluation" in the literature shows an increase from 7 papers in 1990-2000 to 113 papers in 2006-2013.

well prepared to work with other cultures. Third, evaluators need to be cognizant and self-reflective of their own cultures and how their own backgrounds may be assets or limitations in conducting an evaluation. Fourth, the AEA statement explains that culture has implications for all phases of evaluation.

Cultural competence is regarded as an ethical consideration that allows evaluations to produce respectful evaluations which take into account the shared understandings and valid inferences from diverse perspectives (American Evaluation Association, 2011). AEA lists four essential practices for cultural competence in evaluation: (1) acknowledge the complexity of cultural diversity, (2) recognize the dynamics of power, (3) recognize and eliminate bias in language, and (4) employ culturally appropriate models. AEA's statement represents a formal validation of the recognition of the importance of cultural competence in evaluation among American evaluators. In a similar sense, a Latin American working group from the Latin American Network of Monitoring and Evaluation (ReLAC) published in 2016 a set of evaluation standards in which one of the domains explicitly states the importance of cultural understanding (Rodríguez Bilella et al., 2016).

The need to consider culture in evaluation and to embrace its presence in all areas of the evaluative process, has been discussed by various prominent authors in the field (e.g. Kirkhart 2005, Hopson 2009, Mertens 2011, Symonette 2004, Cram 2009, and Bledsoe and Hopson 2009, among others). For instance, Mertens' transformative evaluation approach explains the need to include the cultural perspectives of stakeholders in the evaluation design, and to use multiple methods in order to determine credible measures (Bledsoe and Donaldson in Hood, Hopson and Frierson 2015, 6). Without culturally competence there are risks of 'otherizing' underserved communities and perpetuating inequalities (Mertens, Bledsoe, Sullivan, & Wilson, 2010). Other authors, such as Kirkhart (2013) contend that we can obtain valid measurement of an evaluand only by a careful consideration of culture within every part of the evaluation framework (Hood et al., 2015).

In addition to the increasing amount of theoretical literature on cultural competence in evaluation, there has also been an increase in the number of empirical studies on the topic. For instance,

Chouinard and Cousin's (2009) systematic review of 52 empirical studies of evaluations that considered culture as a key variable to be included in methodological processes in multi-cultural contexts, from 1991-2008, illustrates the growing interest in culturally competent evaluation. The growing literature about cultural competence in evaluation reflects evaluators' increasing recognition of its importance for producing sound and valid evaluations.

Review of Culturally Competent Evaluation

Chouinard and Cousins' (2009) systematic review provides an overview of important theoretical approaches about culturally competent evaluation, which serves as a starting point to develop a more complete framework. The authors mention that their systematic review was guided by two key theoretical constructs: (1) the conception of evaluation as a relational endeavor, and (2) the ecological perspective of evaluation. Considering evaluation as a relational endeavor implies recognizing that it is fundamentally grounded in social relations (Symonette 2004 in Chouinard & Cousins 2009). Moreover, the relational construct indicates that, epistemologically, evaluators and the diverse stakeholders are interconnected, and they influence each other, as together they co-construct evaluation findings (Rebien, 1996 in Chouinard & Cousins 2009, 461). The authors explain that the ecological perspective construct consists of the notion that programs and their evaluations are contextually inserted within a program setting, as well as embedded and intertwined in broader cultural, historical, political, social, and institutional structures and practices. The authors explain that the relational and ecological perspectives provide "an overarching framework in which to understand culture, context, and social relations involved in the evaluative encounter" (Chouinard & Cousins, 2009), and represent a starting point of their more elaborated conceptual framework which is based on their systematic review.

Chouinard and Cousins' systematic review of empirical studies of evaluations that considered culture as a key factor provides important insights about the variety of approaches towards culturally competent evaluation, and some of the main common themes that appear across studies. Regarding how culture is considered in the reviewed studies, over half of them considered it from

a broader social and political perspective (requiring awareness of internal and external factors). Other studies, especially those conducted within indigenous communities, considered that evaluation needs to understand the specific community as well as appreciate the historical interconnectivity with the broader community, specifically in terms of the history of exploitation and colonialization between indigenous communities and the dominant culture (Clayson et al., 2002; Coppens et al., 2006; Fisher & Ball, 2002; Alkon et al. 2001, in Chouinard & Cousins 2009, p. 479).

The reviewed studies also varied in their levels of collaboration and stakeholder involvement; yet, the majority discussed the need to build authentic relationships and partnership in order to build trust and improve mutual understanding. A number of studies also noted that culturally-validated measures not only include language considerations, but also communication styles, local norms, and local context. Among the most important insights from their study, the authors' findings indicate that "culture and cultural diversity influence every dimension of the evaluation, including methodology and methods selection, intergroup relational dynamics, cross-cultural understanding, and evaluator positionality and roles" (Chouinard & Cousins 2009, p. 482). Based on their findings, the authors developed a five-dimensional framework of cultural context to illustrate the multiple dimensions involved in a cross-cultural approach to evaluation: relational, ecological, methodological, organizational, and personal (evaluator). The authors mention that these five interconnected dimensions can be analyzed to understand how they inform and influence the relationship between the evaluator and stakeholders.

In conclusion, the growing recognition of the importance and centrality of cultural considerations in evaluation theory and practice is reflected in several ways and from different sources. The publication of AEA's statement on cultural competence, along with the creation of CREA in 2011 are important milestones in the positioning and acknowledgement of the importance of culturally responsive/competent evaluation. In addition, the growing theoretical and empirical literature on the topic reflects the interest among researchers and prominent writers in the evaluation field to

explore and learn more about the influences of culture across all evaluation stages and regarding validity considerations.

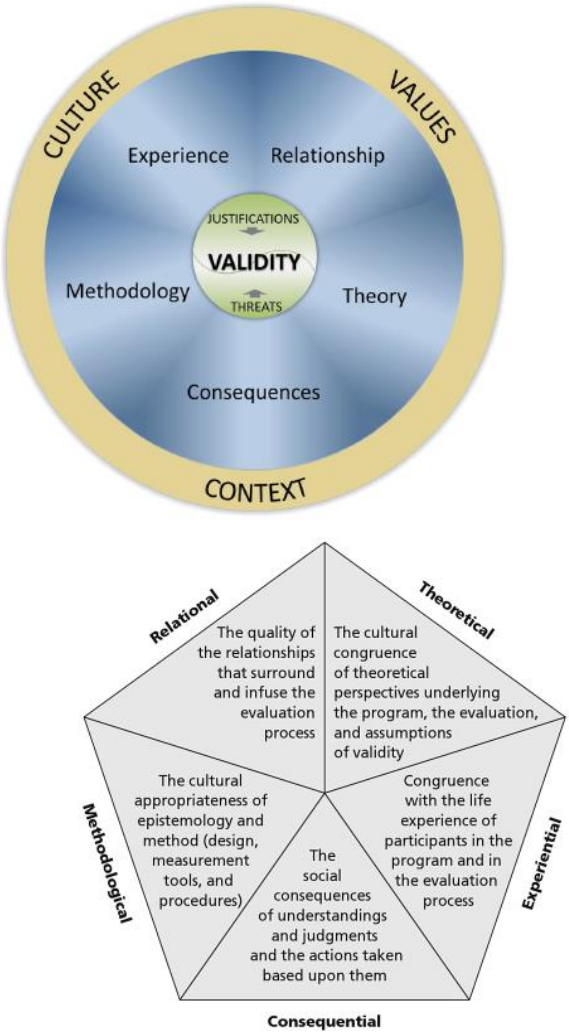
Multicultural Validity

Before reviewing Culturally Responsive evaluation and Indigenous Evaluation Frameworks, it is important to discuss how validity arguments are connected with factors related to cultural context, differing worldviews, and cultural competence. Within the evaluation field, an assessment of the validity of a study is one of the main yardsticks that evaluators and stakeholders use to determine the accuracy and correctness of an evaluation. Researchers tend to widely discuss the measurement, internal, external, and statistical conclusion validity of their studies' findings in order to convince the audience about the trustworthiness of their results. Yet, similarly to how culture affects the understandings and perceptions of illness, health and quality of health (as discussed above), cultural differences also affect validity considerations. In addition, if we consider evaluation as the science of valuing (determining of merit or worth), cultural diversity and differing worldviews can affect how validity is understood and determined. As Kirkhart explains, "validity may be examined through different lenses and in the context of different applications" (Kirkhart 2013b, p. 134).Consequently, validity should be multicultural and open to perspectives previously marginalized, and it should be repositioned to be centered in culture so that all definitions of validity are understood as culturally located (Hood, Hopson, & Kirkhart, 2015; Kirkhart, 1995; Kirkhart, 2013a).

The term multicultural validity was introduced first by Kirkhart in the 1994 AEA annual meeting and is defined as "the accuracy or trustworthiness of understandings and judgments, actions, and consequences, across multiple, intersecting dimensions of cultural diversity." (Kirkhart, 1995). It is important to mention that it is not a new type of validity; it is a concept that suggests that validity is an expansive construct that can be understood from multiple perspectives (Hood et al., 2015). Moreover, multicultural validity not only moves culture to the center of validity arguments, but it also recognizes that culture infuses all understandings (LaFrance, Nichols and Kirkhart 2015, p.58).

Therefore, in order to analyze validity arguments, Kirkhart developed a justificatory framework with five perspectives of multicultural validity: methodological, relational, experiential, theoretical, and consequential justifications – see Figure 3.2 (Kirkhart, 2013b).

Figure 3.2: Validity centered in culture showing sources of justification/threat



Source: (Kirkhart, 2013a; Kirkhart, 2013b)

The multicultural validity lens views culture as involving multiple intersecting dimensions with explicit attention context and values (Kirkhart, 2013b). As figure 3.2 shows, multicultural validity is surrounded by five justificatory perspectives which interact, build upon one another, and direct attention to different types of evidence to support arguments. In no specific order, first, relational justifications include the quality of relationships among evaluation participants and places. Second,

theoretical justifications call for a revision of the congruence of theoretical perspectives underlying a program, the evaluation, and assumptions of validity. Third, consequential justifications include examining the impacts/consequences of evaluation to support validity claims. Fourth, methodological justifications draw attention to the choices of epistemology and choice of methods. Fifth, experiential justifications approach validity from the perspective of program participants/stakeholders and their life experiences (Kirkhart, 2013b). These five justificatory perspectives allow evaluators to deconstruct the bases on which validity is argued, and analyze validity arguments through different lenses.

In order to translate multicultural validity into an accessible list of key considerations Kirkhart developed a Culture Checklist which aims to support multicultural validity by providing core concepts that evaluators should keep checking on as they move through the procedural steps of evaluation (Kirkhart, 2013a). Kirkhart's checklist includes nine considerations to improve multicultural validity of evaluation. First, the evaluator should consider the history, traditions, and cultural heritage of the program or services being evaluated (i.e. the evaluand), including their evolution over time. Second, the evaluator should consider the location and the various intersections at the individual, organizational and systemic levels. Third, the evaluator should consider power relations, discrimination and social justice, as well as how privilege or prejudice is attached to certain cultural signifiers. Fourth, the evaluator should consider whose voices and perspectives are amplified/silenced, as well as understand the language, jargon and communicative strategies. Fifth, it is important to consider the relationship and connection among the evaluand, the community and the evaluation taking into consideration the time, place and Universe. Sixth, the evaluator should pay attention to the perception of time: pacing, scheduling, attention to longer impacts. Seventh, the evaluator should pay attention to how the evaluation returns benefits to the evaluand and the surrounding community. Eight, the evaluator should have the ability to evolve new ideas, to receive new information, and to reorganize and change in response to new experiences. Kirkhart's last principle is reflexivity: an evaluator should be reflective and apply the

principles of evaluation to one's own person and work.

In conclusion, the concept of multicultural validity opens up the discussion about how validity arguments can be seen through different lenses in the context of different applications. Since different cultures may have different ways of knowing and valuing, validity -which references the correctness of inferences and actions (Cronbach, 1980; Scriven, 1991) - can also been seen through different lenses. Furthermore, taking into account that validity intersects culture –which is infused with privilege and discrimination- allows us to comprehend that "validity stands as a powerful gatekeeper of whose ideas, methods, and worldviews are recognized as legitimate" (LaFrance, Kirkhart and Nichols 2015, p. 52). For these reasons, Kirkhart's justificatory perspectives for multicultural validity are a useful tool to analyze the various dimensions of validity arguments with a multicultural perspective, and serve as one of the guiding frameworks for this dissertation's choice of methodology and add a reflective component about the validity of the findings from a multicultural point of view..

Culturally Responsive Evaluation (CRE)

Culturally Responsive Evaluation (CRE) is a framework that takes into account multicultural validity considerations, and is relevant to this dissertation given its position to center evaluation theory and practice in culture. CRE challenges evaluators to reflect on power dynamics, pay attention to social justice, and recognize the sense of 'social responsibility' that requires the work to be responsive to the community that is served (Hood et al., 2015). CRE has a theory base that incorporates existing evaluation approaches and that is influenced by other culturally responsive notions in other fields. Moreover, CRE is a useful framework that is compatible with theory-driven, transformative and system approaches, and it provides a nine-stage model that served as a major guide and reference in this dissertation. CRE is important since cultural responsiveness increases both the credibility and utility of evaluation results (Hood, Hopson & Kirkhart 2015, 295).

The early roots of CRE began in the education field with culturally responsive pedagogy literature, and early writings on culturally responsive assessment. With the contribution of Kirkhart's (1995)

conceptualization and articulation of the construct of multicultural validity in evaluation, these concepts were then extended to evaluation and developed into a CRE framework by Stafford Hood and significant contributions of other authors in the evaluation field in the last 10-15 years (Hood et al., 2015). Hopson (2009) explains that within the CRE framework "culture is imbued within and throughout the evaluation process" (Hood, Hopson & Frierson 2015, p. 9), and defines CRE as follows:

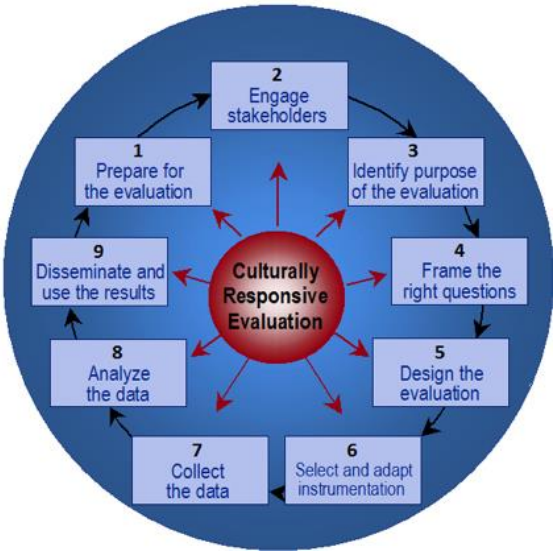
> CRE is a theoretical, conceptual and inherently political position that includes the centrality of and [attunement] to culture in the theory and practice of evaluation. That is, CRE recognizes that demographic, sociopolitical, and contextual dimensions, locations, perspectives, and characteristics of culture matter fundamentally in evaluation (Hopson 2009, 431).

Furthermore, CRE is a holistic framework which rejects that evaluation can be culture-free, and which recognizes that culturally defined values and beliefs are at the center of any evaluative effort (Frierson, Hood, Hughes, & Thomas, 2010). In addition, CRE gives particular attention to groups that have been historically marginalized, seeking to bring equity and balance into the evaluation process (Hood et al., 2015). This aspect of CRE is particularly important in this dissertation given the historical marginalization of Ecuadorian indigenous groups.

Although CRE does not propose a unique set of steps that are different from other evaluation approaches, it does explain that there are nine stages in which CRE is carried out (see figure 3.3) in order to create accurate, valid, and culturally-grounded understanding of the evaluand (Hood et al., 2015). First, while preparing for the evaluation, CRE requires particular attention to the context and history of the location in which an evaluation will be conducted. Second, CRE indicates that the evaluation should engage and include stakeholders from multiple perspectives and understand power issues. Third, while identifying the purpose of the evaluation, the evaluator should understand the distribution of the resources and the intent of the evaluation from the perspective of multiple stakeholders. Fourth, in the process of framing the evaluation questions, CRE suggests working with stakeholders to reflect on nuances of meaning and how different types of questions

may limit or expand what can be learned from an evaluation. Fifth, CRE indicates that the evaluation design should be appropriate for both the questions and context. Sixth, instruments should be selected and adapted according to the context by closely inspecting for cultural bias in both language and content. Seventh, data collection procedures should be respectful and sensitive to the cultural norms and context. Eight, the analysis and interpretation of data should consider the cultural context, and it might be necessary to involve cultural interpreters and/or stakeholders as reviewers to assist in interpretation. The last stage is disseminating and using the results, which often leads to a new evaluation cycle. This stage is very important since it has the potential for positive change. By improving the cultural responsiveness in every stage, both the credibility and utility of evaluation results can be increased.

Figure 3.3: Culturally Responsive Evaluation Framework



Source: (Hood et al., 2015)

In conclusion, given that one of the intended purposes of this dissertation is to reflect upon how evaluation can be tailored to clarify the underlying mechanisms and theory of change of childbirth services in a multicultural context more fully, CRE provides a guiding framework to conduct the research. The CRE considerations for the nine stages described above serve as a starting point and reference in the dissertation. The focus of this dissertation, which also aims to understand how evaluation can be tailored to better assess the effects of culturally adequate health services in a

multicultural context, is in line with CRE's principles and future agenda for research. As Hood et al. 2015 explain, "future implications of CRE suggest that new approaches to core concepts such as validity deserve more exploration", and there is a "need to develop increasingly sophisticated ways to center evaluation in culture, both domestically and internationally" (Hood et al. 2015, p. 311).

Indigenous Evaluation Framework

As with multicultural validity and CRE, the Indigenous Evaluation Framework (IEF) focuses on cultural considerations within the evaluation process. Furthermore, it also puts special emphasis on indigenous populations and their particular ways of knowing, which is one of this dissertation's interests. Since indigenous communities have ways of assessing merit/worth based on traditional values and cultural expressions, IEF indicates that this knowledge should inform how evaluation is conducted and used in their communities (LaFrance and Nichols 2009, 4). In addition IEF's principles suggest that evaluation methods and practices should be tailored to fit indigenous communities' needs, context and conditions. In this sense, when indigenous peoples define evaluation's practice, meaning and usefulness in their own terms, they are not only responding to requirements imposed by Western practices, and can take ownership of the evaluation (LaFrance & Nichols, 2009). Therefore, although this framework was developed specifically for American Indian tribes in North America, it still has important and relevant components that are applicable to indigenous communities in Ecuador.

The history and process of how IEF was developed has important lessons for this dissertation, especially when exploring how evaluation approaches should be designed in order to assess the merit of culturally adequate childbirth services in Ecuador. For instance, the development of the IEF was a demand-driven initiative based on the reaction of indigenous people towards Western imposed models. IEF was "developed in response to requests from tribal colleges to have an evaluation model that would be more respectful of their settings than Western models imposed by external funding organizations" (LaFrance, Nichols, & Kirkhart, 2012). Similarly to indigenous

people in Latin America, American Indian people have often suffered from intrusive studies by anthropologists and other researchers "that brought little more than exploitation and the loss of cultural ownership to Indian people" (LaFrance & Nichols 2009, p. 4). So, IEF offers the opportunity to indigenous peoples to define evaluation in their own terms, and take ownership of the evaluation process.

IEF's theoretical base and its view of validity are relevant to this dissertation since these underlying assumptions also affect how an evaluation framework might be tailored to assess cultural competent childbirth services in Ecuador – a country with several indigenous nationalities. Within the IEF, the traditional positivist view of validity and its threats (à la Cook and Campbell) might not be applicable. IEF does not discuss validity through an Indigenous epistemology and does not directly address it as separate from evaluation process. As LaFrance, Kirkhart and Nichols (2015) explain, while from a Western perspective validity is an aspiration that guides methodological considerations, within Indigenous epistemology it is difficult to separate the concept of validity from methodology. Since Indigenous evaluation is local and tribal, "if the IEF were to embrace a position, it is perhaps in the constructivist or postmodern camp of Kvale (1995)" (LaFrance, Kirkhart & Nichols 2015, p. 65). This is because IEF focuses on contextual factors, and assumes that although there are no universal truths, there could be some community/individual level truths. Moreover, the authors also mention that Kirkhart's concept of multicultural validity resonates with the views of IEF (particularly the relational and consequential dimensions). The applicability of all these considerations needs to be explored in the context of indigenous communities in Ecuador.

Reflecting and Applying the Concepts of CRE and Multicultural Validity

Based on CRE's framework, this dissertation reflects upon how to better design and implement evaluation approaches to assess the merit and worth of culturally adequate childbirth practices based on traditional values and cultural expressions. Following CRE's view that evaluation cannot be culture-free, and recognizing that culturally defined values and beliefs are at the center of any evaluative effort, this dissertation uses qualitative methods to better understand how an evaluation

approach should be designed to include traditional values and indigenous viewpoints about the merit and worth of culturally adequate childbirth practices. Moreover, the qualitative data collection and analysis for question 1.b. was designed to analyze the different perspectives held about cultural competence in the delivery of healthcare services. The qualitative data analysis explores the differing views of cultural competence in health, which allows to reflect upon how evaluation may also be tailored to assess the merit and worth of these services from an indigenous perspective. In addition, CRE considerations for the nine stages in conjunction with Kirkhart's Culture multicultural validity justificatory perspectives serve as a reference for the methodology considerations in this study.

Following the multicultural validity approach, Kirkhart's justificatory perspectives were used to design and conduct the interviews and to reflect upon how monitoring and evaluation fails, or succeeds, in considering the following elements: history, traditions, and cultural heritage of or services being evaluated; location and the various intersections at the individual, organizational and systemic levels; power relations, discrimination and social justice; whose voices and perspectives are amplified/silenced and the language, jargon and communicative strategies employed; the relationship and connection among the evaluand, the community and the evaluation taking into consideration the time, place and Universe; perceptions of time; how the evaluation returns benefits to the evaluand and the surrounding community; the ability to evolve new ideas, to receive new information, and to reorganize and change in response to new experiences; and reflexivity considerations.

Closing remarks

In sum, there is a widespread agreement that culture has important implications for validity arguments, and that there is a need for culturally competent evaluation. Moreover, cultural considerations can be considered as fundamental elements in evaluation theory and practice, especially in multicultural settings. The theoretical basis of multicultural validity, CRE and IEF open up the discussion about how validity arguments can be viewed through different lenses in the

context of different application. In addition, since validity considerations may be regarded as gatekeepers of whose ideas, methods, and worldviews are recognized as legitimate, there is a need to explore these themes in order to understand the gaps in how culturally adequate child delivery practices are being evaluated in Ecuador and how these evaluation approaches can be better designed/implemented to reflect traditional values and cultural expressions.

The last part of this chapter reviewed different theoretical approaches related to cultural competence in program evaluation, such as Multicultural Validity, Culturally Responsive Evaluation and Indigenous Evaluation Framework. First, this chapter concludes that the concept of multicultural validity opens up the discussion about how validity arguments can be seen through different lenses in the context of different applications. In addition, since validity intersects culture –which is infused with privilege and discrimination- it could act as a gatekeeper of whose ideas, methods, and worldviews are recognized as legitimate. This has important implications for evaluation practice and evaluation use, so in order to analyze the various dimensions of validity arguments with a multicultural perspective, Kirkhart's multicultural validity justificatory perspectives were used as one of the guiding frameworks for this dissertation. Second, since one of the goals of this dissertation is to understand how evaluation can be tailored to better assess the effects of culturally adequate health services in a multicultural context, CRE's principles and stages of evaluation provide an important foundation to guide the choice of methods, interview questions, and interpretation of results. Lastly, the participatory nature of IEF and its focus on contextual factors through an indigenous viewpoint provide important insights for this dissertation's task to understand how an evaluation approach to assess the merit/worth of culturally adequate childbirth practices based on traditional values and cultural expressions should be designed and implemented.

Chapter 4: What are the main factors associated with the choice of health-facility child delivery in a multicultural developing country like Ecuador?

This chapter presents the findings of the qualitative analysis of interviews as well as the findings of the quantitative analysis of surveys and administrative data. Since this dissertation employed a mixed methods convergent parallel design, the qualitative and quantitative results are presented in two separate strands of analysis, followed by a unifying conclusion that merges the results by looking at convergence or variation in the data. Therefore, this chapter is divided into three main sections: qualitative analysis, quantitative analysis, and mixed-methods conclusions. Lastly, the main findings are summarized.

Qualitative Analysis

This section presents the findings from the interviews with Shuar women in the Morona Santiago province regarding the main factors associated with institutional delivery. First, this section presents a short reflection of my experience as an interviewer, and how I perceive that my condition might have affected the responses I obtained. Second, this section presents a profile of the Shuar interviewees followed by a short description of the interviewees' pregnancy experiences and Shuar traditions related to childbirth. Third, this section presents an analysis of how Shuar women decide upon the place where they deliver their babies by describing who makes the decisions, the perceptions that affect decision-making, and the interviewees' perception about the ideal places for childbirth. Lastly, a short summary of the qualitative findings is presented to describe the main factors that influence Shuar women's decisions to deliver their babies at home, versus at a health care institution.

Interviewer insights about the process of conducting the interviews

As an Ecuadorian woman, who was 5 months pregnant at the time the interviews were conducted, I felt my condition helped me build rapport with the interviewees in a faster and deeper way. Although in various instances the interviewees asked me if I was a foreigner, perhaps due to my light complexion and features, I perceived that they were then reassured when I explained I was

from Quito – Ecuador's capital. I think this is important to mention, since I believe that the answers to the interview questions may have differed if the interviewees felt they had to explain their experiences to a foreigner, than if they explained them to someone who shares their same national background.

In addition, as soon as the interviewees learned I was pregnant, I perceived they were more relaxed and comfortable talking about their pregnancies and childbirth experiences. My perception was that they felt more empowered, and spoke to me as someone giving advice to a person who has not yet experienced pregnancy nor childbirth. I believe that my condition helped the interviewees to feel more open to express their insights and perceptions about childbirth, and thus, this rapport strengthens the validity of the findings.

Shuar women characteristics and living conditions by site

A total of 13 Shuar women and 1 Shuar man were interviewed in the province of Morona Santiago. Their age and birthing experiences are described in Table 4.1.

Table 4.1: Profile of the interviewees (N=14)

Characteristic	**#**	**%**
Age		
19-25	2	14%
25-35	6	43%
36-45	3	21%
>45	3	21%
Average:	37.1	
# of children		
1-2	4	29%
3-4	4	29%
5-9	4	29%
≥10	2	14%
Average:	5	
Age when first child was born		
15-17	8	57%
18-20	6	43%
Average:	17.6	
Education		
Primary	4	29%
Some secondary	4	29%
Completed Secondary	5	36%
Place of delivery		
Home	3	21%
Hospital	4	29%
Both	7	50%

Some of the interviewees' characteristics can be linked to higher risks of suffering from complications that may lead to maternal or infant deaths. Specifically, pregnancies occurring at a young age, and high frequency of pregnancies, are among Stokoe's (1991) determinants of maternal mortality. As Table 4.1 indicates, most interviewees had their first baby before they were 18 years old, and most of them had at least 3 children (average number of children is 5). In addition, more than half of the interviewees had not completed high school. A more detailed description of the interviewee characteristics and living conditions is described for each of the three sites in the following pages.

Macas

Macas is the capital city of the Morona Santiago province. The new Macas public general hospital was opened in 2011. Before that, the old hospital had even less capacity. The hospital does not have a birthing room with the infrastructure and equipment for culturally adequate childbirth. According to the doctor who was interviewed, even though the hospital is new and has more capacity, there is still a shortage of beds. The interviews with Shuar women took place in San Luis de Inimkis, a Shuar community approximately 30 minutes away from Macas by car. The community is located south of the Sevilla Don Bosco parish (parroquia).

Interviewee characteristics

I interviewed three Shuar women in the San Luis de Inimkis Shuar community. Although the interviewees are not a representative sample of Shuar women living in communities near Macas, their characteristics shed light on the living conditions of at least some Shuar women in these communities. These characteristics can be then compared with the findings from the quantitative analysis component, and also linked to the theory and models about maternal mortality determinants.

Even though the interviewees' ages range from 19 to 54, they share a common characteristic of having had their first child when they were only 17 years old. Moreover, one of the interviewees had 10 children. These two factors, early first births and frequent pregnancies, are considered by

Stokoe (1991) as cultural factors that are determinants of maternal mortality.

Some of the interviewees' characteristics and living conditions can be considered as factors that tend to be associated with higher risk of maternal mortality. Specifically, poverty (and increased workloads) and lack of access to clean water and sanitation are among Stokoe's (1991) social and environmental factors that affect maternal mortality. The interviewees' educational attainment ranged from primary school to high school education, and none currently hold a formal job. All of the interviewed women said they were homemakers, but they also work the land and raise some farm animals for their own consumption. The access to water was a well/natural spring for two women, and piped water for one woman. In addition, none of the interviewees have access to improved sanitation; the interviewees practice open defecation. The three women are neighbors, so the distance to the nearest health facility – which is a small public primary care health center three blocks away from their homes - is the same for the three.

Table 4.2: Interviewee Characteristics – San Luis de Inimkis (Shuar community near Macas)

Type	Age	Marital Status	Place	Delivery place	# of children	Age when had 1st child	Education
Shuar woman + family member	54	Married	San Luis Inimkis	Home	10	17	Primary (elementary school)
Shuar woman	30	Single	San Luis Inimkis	Both*	2	17	High school (bachiller)
Shuar woman	19	Married	San Luis Inimkis	Hospital	2	17	7th grade

* Delivery place= "both" means that the interviewee had experienced both home and hospital deliveries in different occasions.

In addition to the three Shuar women, I interviewed one male doctor (OBGYN) and one female nurse at the Macas General Hospital.

Méndez (Santiago de Méndez)

Santiago de Méndez is approximately 1½ hours away from Macas by car. The Basic Hospital of Méndez (Centro de Salud Hospital Quito de Méndez) has 15-20 beds, and has a birthing room with the infrastructure and equipment for culturally adequate childbirth since 2006. The nurse who was interviewed explained that they have at least 10 births per month (14-21 on average). She estimates

that around 60% of childbirths are by indigenous women. In addition to its regular rooms, the hospital has two rooms for patients who come from far away so they can stay until the time of delivery comes (*casa de espera*). The interviews with Shuar women took place in Nungande (4) and San Vicente (1), which are Shuar communities approximately 30 minutes away from Méndez by car. These communities are located near Patuca in Morona Santiago.

Interviewee characteristics

I interviewed five Shuar women in the Nungande (4) and San Vicente (1) Shuar communities. Although the interviewees are not a representative sample of Shuar women living in communities near Méndez, their characteristics shed light on the living conditions of at least some Shuar women in these communities. The interviewees' ages range from 25 to 67. These women, similarly to the women interviewed near Macas, share a common characteristics of having had their first child when they were young (15-20 years old). In addition, all of the interviewees have at least 3 children, and one of the interviewees has 11 children. As mentioned above, Stokoe (1991) considered these two factors - early first births and frequent pregnancies - as cultural factors that are determinants of maternal mortality. In addition to the five Shuar women, I interviewed one doctor and one nurse at the Méndez Hospital.

Two social and environmental factors that affect maternal mortality from Stokoe's (1991) research were evidenced across the interviewees' characteristics: poverty (and increased workloads) and poor access to clean water. The interviewees' educational attainment ranged from third grade primary school to high school education, and only one woman currently has a formal job. All of the interviewed women said they are homemakers, but they also work the land (one of them had also worked in mines during her pregnancy), and they raise some farm animals for their own consumption. The interviewees have access to piped water, but there are serious concerns about its quality due to the communities' proximity to mines. Unlike the women interviewed in San Luis de Inimkis (near Macas), the interviewees in the Nungande and San Vicente communities do have access to improved sanitation (if not at home, at least at the community level). Both Shuar

communities are approximately 5 minutes away from Patuca's health center, and 30 minutes away from the Méndez Hospital, by car.

Distance to the nearest hospital and access to transportation were found to be important factors in determining where women give birth. For instance, the 45 year old interviewee had her first child at home when she lived in Nungande, but delivered the rest of her 3 children at the hospital, because she had moved temporarily to Méndez and lived only a couple of blocks away from the hospital. Moreover, although all the interviewees live approximately close to the hospital, i.e. 30 minutes or less by car, there are some cases where the interviewees eventually decided to go to the hospital but ended up delivering their babies at home due to their delayed decision.

Table 4.3: Interviewee Characteristics–Nungande and San Vicente (Shuar communities near Méndez)

Type	Age	Marital Status	Place	Delivery place	Delivered before/ after intercultural services	# of children	Age when had 1st child	Education
Shuar woman	25	Married	San Vicente	Hospital	Before & after: Macas – C-section Méndez – after Sucua - 2013	4	17	Primary (elementary school)
Shuar woman	45	Married	Nungande	Both (1st at home, the rest at the hospital)	Before	4	20	Some high school (11th grade)
Shuar woman	38	Single	Nungande	Both	Before (home) and after (home and hospital)	7	15	High school (*bachiller*)
Shuar woman	31	Married	Nungande	Home	Before and after	3	20	High school (*bachiller*)
Shuar woman & family member	67	Married	Nungande	Both	Family member (before)	11	16	3rd grade of primary school

Sucúa

Sucúa is approximately 20-30 minutes from Macas by car. According to the Resident Doctor, the Basic Hospital of Sucua has 50 beds and has provided culturally adequate childbirth services since 2008. The hospital inaugurated its new facilities in 2012. The interviews with Shuar women took

place in Asunción (4) and Santa Marianita (1), which are Shuar communities approximately 15 and 25 minutes away from Sucúa by car. I also interviewed one Shuar man in order to further understand the role of different family members during childbirth.

Interviewee characteristics

I interviewed five Shuar women in the Asuncion (4) and Santa Marianita (1) Shuar communities. Although the interviewees are not a representative sample of Shuar women living in communities near Sucúa, their characteristics shed light on the living conditions of at least some Shuar women in these communities. The interviewees' ages range from 26 to 52. These women, similar to the women interviewed near Macas, share a common characteristic of having had their first child when they were young (15-20 years old). In addition, all of the interviewees have more than 2 children, and one of the interviewees has 9 children. In the case of the 52 year old interviewee, she had to go to a private clinic to deliver her last three children because she had some complications. Furthermore, her last child was born dead and had to be revived by the doctor. Stokoe (1991) considered these two factors - early first births and frequent pregnancies - as cultural factors that are determinants of maternal mortality.

Table 4.4: Interviewee Characteristics–Asunción and Santa Marianita (Shuar communities near Sucúa)

Type	Age	Marital Status	Place	Delivery place	Delivered before/ after intercultural services available	# of children	Age when had 1st child	Education
Shuar woman	31	Married	Asunción	Home	Before and after	5	19	10th grade
Shuar woman	52	Widow	Asunción	Both	Before. (Also family member).	9	18	Primary (elementary school)
Shuar woman	29	Married / Civil union	Asunción / Santa Marianita	Both	Before(home) After (hospital)	2	17	High school (bachiller)
Shuar woman	26	Married	Asunción	Hospital	After	2	20	High school (bachiller)
Shuar woman	39	Married	Asunción	Hospital	Before	4	15	10th grade
Shuar man	34	Married	Asunción	Both	Family member	5	18	

Pregnancy experiences and Shuar traditions related to childbirth

Pregnancy experience and antenatal care

Pregnancy experiences and antenatal care are important factors that can influence maternal and infant health. When the interviewees talked about their pregnancy experiences, they mentioned nausea as their main complication. Infections were not prevalent among interviewees, but in the case of one interviewee near Macas who had infections during pregnancy, she was treated with traditional remedies instead of going to the doctor. In general, Shuar women carried on with their lives performing the same chores and tasks during pregnancy as they had done before getting pregnant. Also, although the medical personnel mentioned that there seems to be a shortage of antenatal care among indigenous women, most of the younger interviewees mentioned going to regular antenatal checkups.

A common perception across the interviewees was that Shuar women proceed with their lives and normal daily chores when they are pregnant. This can sometimes put pregnant women in risky situations, such as the case of one of the interviewees near Méndez, who kept working at the mines during her pregnancy. Pregnancy does not seem to be considered as something that affects women's responsibilities and work duties. As one of the interviewees mentioned,

> "[when I was pregnant with my ninth child] I worked. I would go to see how the cows were doing, and would ride a horse" (Shuar woman near Macas -54).

In addition, an interviewee mentioned that the pregnancy experience was extremely difficult for her since her spouse would get her pregnant, and then leave her with no economic support to take care of herself. Therefore, pregnancy experiences were remembered by some interviewees as particularly challenging moments.

The interviewed medical personnel provide important insights on the situation of antenatal care for Shuar women. This is important because the lack of (or shortage of) antenatal care is mentioned as one of the cultural determinants of maternal mortality by Stokoe (1991). Both the nurse and doctor

who were interviewed at the Macas hospital indicated that indigenous women tend to have fewer or no prenatal checkups when they are pregnant. The Macas' OBGYN doctor even mentioned that when Shuar women come to the hospital for a checkup, the doctor tries to perform as many exams and procedures as they can in their visit, since "we know that they [the indigenous people] are not reliable in following the instructions we give them about norms and procedures." Moreover, the doctor at the Méndez hospital mentioned that indigenous women living in rural areas tend to have very few antenatal visits (sometimes only 1 or 2), but that this is mostly due to the distance to the nearest health centers: "women who live close to a health center or hospital may even have 6 or 7 checkups" (Doctor –Méndez hospital). Therefore, medical personnel seem to perceive that the shortage of antenatal care could be a problem that affects Shuar women in different ways.

Nevertheless, it is also important to mention that most of the Shuar women interviewed had gone to routine checkups during their pregnancies. Only the two oldest interviewees near Macas and Méndez mentioned that they did not go to any checkups in any of their pregnancies. They even mentioned that there was no such thing when they were pregnant. The other women near Macas reported going to three checkups during their last pregnancy, and most interviewees near Méndez and Sucua said they had gone to routine checkups almost every month (with the exception of one of the interviewees near Sucua who delivered all her children at home and only went to one checkup for one of her children). The checkups sometimes occurred due to the active search of community health workers, and they took place at the primary care health centers nearby. Nevertheless, although younger Shuar women living near hospitals and health centers tend to go to antenatal checkups regularly, this could be different for older women, or for women living in more remote areas.

Traditions

Shuar traditions related to childbirth are mainly related with three issues: delivering babies at home in a vertical (kneeling) position, the valuing of accompaniment by close family members at birth,

and traditional medicine. The interviewees mentioned that the Shuar tradition is to deliver babies at home. The interviewees' ages and their experience with institutional childbirth seem to affect how much they know about Shuar traditions. For instance, the youngest interviewee (age 19), who gave birth at the hospital, mentioned that she did not know much about Shuar traditions related to pregnancy and childbirth. In contrast, the 54 year old interviewee, who delivered her 10 babies at home near Macas, was very knowledgeable about Shuar traditions. She mentioned that usually the husbands help women during delivery, and that sometimes traditional midwives (who are usually women from the community that have experience with childbirth) come to help with the baby's position. There are also several herbs, infusions and foods that are given to pregnant women while they are in labor. Among the ones that were more often mentioned are basil leaf tea, guayusa tea, and an infusion of carrot core.

The position in which women give birth is deeply engrained in Shuar culture and traditions. The vertical birthing position (kneeling or squatting) was mentioned as the traditional position to give birth by almost all interviewees. Vertical childbirth occurs sometimes with the husband's help, and/or often with a wooden bar/stick that they place in the room to help them support their weight while in active labor. The vertical birthing position is so important for Shuar traditional childbirth that it is usually the preferred position. Furthermore, the 31 year old interviewee from Nungande indicated that she believed Shuar women cannot give birth in a horizontal position: "Sometimes [people of] our race cannot give birth laying down (horizontally); they feel uncomfortable – they say." Furthermore, the same interviewee said she believed that the reason why doctors started to offer the intercultural services at the Méndez hospital is because Shuar women are unable to give birth in a horizontal position.

In conclusion, there are very distinct Shuar traditions related to childbirth that affect women's preferences and decisions regarding the place to deliver their babies. Vertical position, accompaniment by family members, and the use of traditional medicine, such as basil leaf tea, are traditions that play an important role during childbirth. Therefore, these traditions can be considered

as factors that influence the choice of home versus institutional delivery.

Main factors that influence indigenous women's decisions to deliver their babies at home versus at a health care institution

In order to understand how Shuar women decide upon the place where they deliver their babies, the content of the interviews was analyzed according to who makes the decision on the place of childbirth, Shuar women's perceptions about home and institutional childbirth, the interviewees' opinions about an ideal place for childbirth, and medical personnel's opinions about why some women prefer to deliver at home.

Who decides?

In general, the interviewees explained that they were the ones who decided where and how to give birth. In some cases, it was mentioned that the pregnant woman's mother or mother-in-law would make suggestions, but, in the end, the decision was made by the pregnant woman. This finding can be contrasted to Kolodin's et al. (2015) finding that indigenous and rural pregnant women in Central America usually have little power in the decision-making process. The interviewees suggested that in some cases the delay in taking the pregnant woman to the hospital was due to the reluctance of a family member to take her to the hospital (often out of fear or due to negative perceptions about medical care). Since the interviewees indicated that the decision of where to give birth relies on themselves, the rest of the analysis is focused on their perceptions and experiences related to home and hospital childbirth.

Perceptions about home and hospital childbirth and other factors that influence decisions

A common theme across interviews was that negative previous experiences with medical care, difficulty to access the hospital, and medical practices (such as routine vaginal examinations) that are not considered appropriate within the culture, can affect women's future decisions on seeking medical care. Consistent with Thaddeus and Maine's (1994) framework and Sychareun's et al. (2012) findings, the interviews suggest that the perceptions about health care and preferences towards certain traditional practices (position at birth, the wish to have family members nearby,

and privacy) are important factors that may become obstacles to giving birth at health facilities that are not adapted to the women's culture. In addition, distance and the quality of health care received in previous encounters also seem to influence the decisions of where Shuar women choose to deliver their babies.

A more detailed analysis by site is provided here:

Interviews near Macas (where no intercultural childbirth services are available)

The main reasons why interviewed women who live near Macas chose to deliver their babies at home (or delayed their decision to deliver at the hospital) were related to Shuar traditions, negative perceptions about medical care, shame of being touched by the doctors (vaginal examinations), long distance to the hospital or difficulties getting to the hospital, and feeling safer at home. The oldest interviewee (age 54), who gave birth 10 times by herself at home, mentioned several times that she was convinced that delivering at home was the best option for her, and that one of the most important reasons she dislikes the medical system is the vaginal examinations. She explained this vehemently:

> "I don't like going to the medical center. Some doctors put their hands inside you. If I die, I die here [at home]. I don't want them to touch me."

This is a strong statement that also evidences the profound preference of certain women towards a Shuar traditional birth. For some Shuar women, the preference of home birth is so deeply tied to their traditions that institutional childbirth may not be even considered as on option.

On the other hand, the comments by younger Shuar women near Macas suggest that the younger generations might be less profoundly determined to give birth in a Shuar traditional way. For instance, the youngest interviewee who lives near Macas (19 years old) explained that she gave birth at the hospital because she was afraid to deliver her baby at home. This reason was also mentioned by the 30 year old interviewee who had her first child at the hospital. The young interviewee also indicated that she chose the hospital because she perceived labor takes less time there, and because she thinks that at the hospital "they clean all your blood from inside".

An insightful perspective about home and hospital childbirth experiences was provided by the 30 year old interviewee from San Luis de Inimkis (near Macas) who experienced both hospital and home childbirths. She gave birth to her first child at the Macas hospital, and to her second child at home with her mother's help. This woman expressed some negative perceptions about the hospital/medical center since, with her first child, she had to go to the hospital several times. This was because every time she went, she was told she was not ready to give birth yet and was sent back home. She also mentioned she did not feel comfortable with the doctors performing vaginal examinations. With her first child, she said she chose to deliver her baby at the hospital because it was her first time and she didn't know where to go.

In line with Thaddeus and Maine's (1994) *Three Delays* framework, the 30 year old interviewee from San Luis de Inimkis experienced a delay in deciding to seek care and in reaching care, which was influenced by several factors, including her previous experience with the health care system, her perceived quality of care, and distance from the hospital. With her second child, she went to the small medical center a couple of blocks away from her home, and the personnel who worked there could not call an ambulance to take her to the hospital because they did not have a phone. So, even though she had decided to go the hospital, she then faced a problem/delay in reaching care. The interviewee explained that since she was afraid she would deliver the baby on her way to the hospital, she decided to give birth at home with her mother's help. Moreover, this interviewee's negative experience with health care affected her preference for future events; she said she would recommend other women, or would prefer herself, to give birth at home. Lastly, this interviewee mentioned having had more trust and felt safer during childbirth at home. Therefore, as Thaddeus and Maine's framework describes, negative previous experiences with medical care, difficulty to access the hospital, and medical practices (such as routine vaginal examinations) that are not considered appropriate within the culture, can affect women's future decisions on seeking medical care.

Interviews near Méndez (intercultural childbirth services available since 2006)

The interviews with Shuar women near Méndez evidenced the importance of positive and negative perceptions of healthcare when they decide the place to give birth. Similar to the women near Macas, the fear of vaginal examinations, episiotomies, and unnecessary c-sections were described by women who did not want to deliver at the hospital. In some cases, fears about medical care during childbirth were shown to delay the decision of seeking care, which ultimately determined where the baby was delivered. Yet, there were also some positive perceptions from the services provided at the Méndez hospital. In addition, some interviewees near Méndez seemed to consider institutional childbirth as "normal", and even the "civilized" way of childbirth nowadays. This could be in part due to the fact that interviewees were more knowledgeable about the benefits of institutional childbirth, and about the services being offered at the hospital in Méndez, due to a socialization campaign.

There are positive and negative perceptions of hospitals and medical care which affect Shuar women's decisions for the place of childbirth. Among the positive perceptions of the medical care offered at the Méndez Hospital, that women mentioned, was that the nurses provide good care of the patients, the medical personnel are prompt to provide medical care (no delays in receiving care), and the hospital has the necessary medicines and equipment that would not be available at home. On the other hand, the negative perceptions of medical care include rudeness (an interviewee mentioned that medical personnel often yell at patients), doctors' lack of patience, patients' fear of episiotomies and of vaginal examinations, their shame of being examined by a male doctor, and their fear of being forced into having an unnecessary cesarean section, among others.

Some of the negative perceptions are illustrated in the following words from the 31 year old interviewee who preferred home childbirth:

> "[doctors] perform vaginal examinations every hour, and that is horrible. I have been told that this is what it is like at the hospital, and that they perform c-sections if you can't [deliver]. And that even if you are able to have natural childbirth they perform c-sections. Sometimes doctors do not have patience, they fear that the baby will die, or that you will

die; and they perform c-sections so babies are born quickly."

Negative perceptions about medical care and family advice appear to be important influencers of the place to deliver. A 30 year old interviewee from Nungande (30 minutes away from Méndez) who delivered her 3 children at home provides important insights about the importance of negative perceptions of hospital births, and of family advice when deciding where to give birth. The interviewee had given birth to her first 2 children at home, before the culturally adequate services were available. During her last childbirth experience, she tried to deliver at home, but after long and painful hours she was willing to go to the hospital. Her mother-in-law did not want to call for a car to take her to the hospital at first, but then decided to call a car. The woman's fear was that at the hospital they would "cut her" (episiotomy and/or cesarean). When the car finally came, the pregnant woman was already in labor and gave birth, precipitously, at home. In addition, the 38 year old interviewee who delivered 6 of her children at home also mentioned that one of the main reasons she chose home childbirth was because she did not want the doctors to touch her (vaginal examination). This illustrates –as Thaddeus and Maine's (1994) 'three delays framework asserts - that there are some fears about medical care during childbirth that can delay the decision of seeking care, which, in turn, can have consequences on the place of delivery, and type of care received during childbirth.

For some Shuar women who live near Méndez, institutional (hospital) deliveries appear to be regarded as the "normal" way of childbirth. Furthermore, the medical care and the procedures women experience at the hospital during childbirth are not called into question regardless of the quality of the medical care services received. For instance, an interviewee delivered three of her four children unattended by a doctor at the hospital. She delivered in a vertical position, at the hospital, but not because she was offered the option, but because in her 3 hospital childbirths the doctors were not around when she delivered. She would kneel and hold to the bed, and some family member or nurse put a blanket underneath so the baby wouldn't bump his/her head. This happened because the doctors and nurses told her that she was still not dilated enough, so they left her alone

for a long while. Moreover, the interviewee mentioned that when they came, the nurses tried to make her lay down in a horizontal position. Yet, the interviewee did not seem to be bothered by these issues; she still perceived the hospital as a better option than home for childbirth. She said that with her first child, she delivered at home "due to naiveté". The interviewee justifies the procedures performed at the hospital as something that should be considered normal, and that women should adapt to those procedures.

In addition, institutional (hospital) deliveries also appear to be perceived as the "civilized" way of childbirth. A 67 year old interviewee in Nungande mentioned that nowadays Shuar women tend give birth at the hospital because "we have become more civilized, like the '*colonos*' [the mestizo people that settled in this Amazon area]". Therefore, institutional deliveries are perceived as a better way to give birth, because it is the way the '*colonos*' give birth. This suggests that for some Shuar women, indigenous/traditional medicine may be regarded as something less worthy only because it is indigenous, and that institutional deliveries are considered a better option because the non-indigenous "civilized" people brought it.

Lastly, something important that came up in the interviews with women living near Méndez is that Shuar interviewees mentioned having knowledge of the availability of intercultural childbirth services at the Méndez hospital through a socialization campaign and posters. Yet, one interviewee explained that although the Méndez hospital was equipped for intercultural childbirth services, this type of services was not offered there. This is worth noting, since it suggests that the availability of culturally adapted (intercultural) infrastructure and equipment does not guarantee that the services are actually offered.

Interviews near Sucúa (intercultural childbirth services available since 2008)

Positive and negative perceptions based on past experiences seem to influence the decisions of where Shuar women choose to give birth. Some interviewees hold positive perceptions of the medical care provided at the Sucua hospital, while others described negative perceptions that have influenced their decision to not go to the hospital to deliver their babies. Among the positive

perceptions of medical care, the interviewees mentioned good quality of care, kind nurses, adequate infrastructure (at the new hospital), and a good/quick birthing experience, since there are medicines that help with hemorrhaging. Among the negative perceptions, the interviewees mentioned mistreatment and delays in receiving care. Yet, these negative perceptions were mostly (except for one interviewee) about the Sucua hospital before 2008, or about other hospitals in Morona Santiago. Lastly, two other important factors that influenced some women to decide not to go to the hospital were the fear of having to have a c-section, and a preference for Shuar traditional childbirth at home.

Negative perceptions of medical care can be founded on the person's own experience, or on the experience someone they knew had. Additionally, these perceptions can change through time with new experiences. For instance, although the 39 year old interviewee from Asuncion (who delivered all her children by c-section at the hospital before the implementation of the intercultural services) indicated that the "old hospital"[21] provided very good quality of care, she believes that nowadays the medical care has deteriorated. This belief is mainly founded on her cousin's bad treatment she received when delivering her baby, and also on her own experience. The interviewee explained that her cousin had to have a "vaginal c-section" (presumably an episiotomy) and was mistreated by the nurses (she was yelled at). In addition, she explained that, at the "old hospital", women were allowed to stay for up to 8 days after they delivered, but nowadays women have to leave the hospital after a day or two. In addition, the interviewee explained that when she wants to take her children to the doctor for their checkups, or when they are sick, it is almost impossible to get an appointment. This is why she often recurs to traditional Shuar medicine, and treats illnesses with herbs. This case shows how a positive perception of medical care during childbirth can change when someone close to the person experiences something negative, and how this can also affect future decisions on

[21] The Sucua Hospital inaugurated and moved to a new infrastructure/medical facility at a new location in 2010. Before 2010, the hospital was still located at the center of the city and provided the same type of services.

accessing health care.

Some negative experiences illustrate the power dynamics between doctors and indigenous women, and can have lasting effects on a person's perception of medical care. This is the case of the 39 year old interviewee, who also had to endure a very serious situation regarding her reproductive rights. Her negative experience is also a reflection of the power/dominance structures in the society, in which some doctors assume a paternalistic role with their indigenous patients. As McNeil, Campinha-Bacote, Tapscott, & Vample (2005) indicate, mistrust in the medical system by certain ethnic groups can be rooted in a long history of medical mistreatment. The interviewee explained that, after her 4th C-section delivery, the doctors performed a tubal ligation without her consent or knowledge. She indicated that, years after she had her last son, she wanted to have another child, and only then found out that the doctors had performed this procedure. She recalls finding out, "… since I had already had four cesarean operations, they had decided to perform the ligation. I did not want this. I have never wanted to have a ligation…" She indicates that she now suffers from headaches, which she attributes to the ligation. She says that, since the ligation, she does not feel like her old self anymore. These extreme negative experiences with medical care can leave a deep mark on a person, which, in turn, may affect the trust they have in doctors, and the likelihood of their to accessing care when needed.

Past negative experiences affect future decisions of the place to deliver babies. For instance, the 29 year old interviewee from Santa Marianita decided to deliver her second child at the hospital since she had a bad experience when she delivered her first child at home. With her first child, the interviewee's father did not support her because she was young and got pregnant out of wedlock. Therefore, he prohibited her to go to the hospital. The interviewee mentioned that she had a painful childbirth at home in which she suffered from major tears on her legs. This experience seemed to be traumatic, since the interviewee mentioned that she wished to not remember/relive that experience. This case not only illustrates how a past negative experience may affect future decisions, but also sheds light into how family members can play an important role in determining

the place for childbirth. Furthermore, this case is indicative of the social norms and gender roles of Shuar people.

Culture and traditions can be important factors that delay Shuar women's decisions to seek care. Some Shuar women try to deliver their babies at home as a first choice, and then go to the hospital as a last resort when home birth was not possible, or was taking too long. This was the case for the 39 year old interviewee who delivered her four sons by c-section. She tried to deliver her first son at home in a traditional way. Her grandfather tried to help her with the delivery, but after the fourth day of labor, he suggested that she needed to go to the hospital because she was too 'narrow' to deliver naturally. This example is in line with Thaddeus and Maine's (1994) theory that culture can delay the decision of seeking care. Moreover, in this woman's case, this experience also affected her future decisions on the place to deliver since she then delivered her other three sons at the hospital.

Traditions play an important role in the first choice of the place to deliver, but complications may ultimately determine the place to deliver. There are also differences in the perceptions of the quality of care provided at private clinics compared to the care provided at the public hospital. For example, the 52 year old interviewee explained that she wished to deliver at home, but due to complications with her last three children, she had to go to a private clinic. She explained that she had to deliver her last 3 children at the clinic because with the 7th child she started bleeding, with the 8th child she did not have contractions past the due date, and with the 9th son she was feeling unwell and fainted after 3 days of labor. This interviewee also provided an insightful perspective on the different perceptions about private clinics and the public hospital. The interviewee explained that she would not go to the public hospital because she had a negative perception that there would be a very long waiting time, and she would die:

"At the hospital sometimes you have to have a lot of patience; sometimes you are in a grave state and they do not provide good care, they do not help you quick enough and you could die. Therefore my husband took me to the clinic so I could receive quick care since I was not well."

Ideal setting for childbirth

The interviewees' descriptions of an ideal setting for childbirth also provide important insights about factors that may influence their decisions on where to deliver their babies. The ideal place for childbirth was closely associated with the place the Shuar interviewees had chosen to deliver their babies on previous occasions; the interviewees who gave birth at home indicated that their ideal setting for childbirth is at home, while the women who chose institutional childbirth indicated that their ideal setting is the hospital. Nevertheless, there were some recurring factors described as essential for an ideal childbirth place across the interviews. Among most Shuar interviewees, privacy (respect), comfort at home (safety), and accompaniment by family members (trust) were mentioned as the main elements of an ideal place for child delivery.

The description of an ideal setting for childbirth seems to reflect previous experiences. Hospital settings were considered ideal for women with institutional childbirth experiences, while home settings were considered ideal by women who gave birth at home. For instance, three out of five Shuar interviewees that live near Sucua mentioned that their ideal place would be at home. The two women who mentioned that their ideal place would be the hospital were the ones that had experience with institutional childbirth at the Sucua hospital after they implemented the intercultural childbirth services. Similarly, there was a difference in the opinions of the women who had delivered at least one of their babies at home near Macas, and the woman who only gave birth at the Macas hospital. While the young woman who delivered at the Macas hospital indicated that her ideal setting for childbirth would be an operating room in which she is surrounded by doctors only, the other two women explained that their ideal setting would be a private room in their homes with one or two family members to support them.

Regarding the perceived ideal setting for childbirth, privacy and accompaniment of family members were recurring themes across interviews near Macas, Méndez and Sucua. For instance, interviewees near Méndez mentioned that an ideal setting would be a clean large private room in which their family members can accompany them. Similarly, accompaniment by family members

was a recurrent theme across all interviewees near Sucua and privacy was mentioned by most interviewees.

In addition, there were also differences between Shuar interviewees and the medical personnel. While Shuar women who live near Macas mainly focused on privacy, comfort at home, and accompaniment by family when describing ideal settings for childbirth, medical personnel focused on infrastructure characteristics and cleanliness. For instance, the OBGYN doctor of the Macas Hospital mentioned that an ideal setting for childbirth would be a hospital room with asepsis and antisepsis conditions, and with qualified medical personnel.

Medical personnel's explanations about why some Shuar women choose to deliver at home instead of the hospital.

The medical personnel interviewed at the three different sites explained that they believed that the main reasons why Shuar women choose deliver their babies at home instead of delivering at the hospital are related to Shuar traditions and to distance to hospitals. First, the interviewees explained that Shuar women deliver at home because it is part of their traditions, and that some Shuar women believe that home childbirth is healthier since it is the way their mothers and grandmothers delivered their babies. So, once again the findings indicate the importance of culture in the decisions of where to give birth, and is in line with Thaddeus and Maine's (1994) description of the delay in seeking care. Second, the interviewees mentioned that the population is disperse, so it might be difficult for some people to get to the hospital. This is related to Thaddeus and Maine's second delay (delay in reaching care).

In addition, some of the medical personnel indicated that there are other factors that might explain why Shuar women decide to deliver their babies at home. For instance, the nurse at the hospital in Méndez explained that indigenous women choose to deliver at home because they are "misinformed", and also because they prefer traditional beverages and to be accompanied by their whole family (while at the hospital they only allow one family member to accompany them). Moreover, the doctor who was interviewed at the Macas hospital indicated that in addition to

cultural preferences and distance, some women mistrust and have fear of the hospital since some years ago there were some cases of maternal and fetal deaths. He further indicates that, "some women still have that [negative] image that the hospital is the place where you go to 'die'". So, there are still some women who have reservations about coming to the hospital. The nurse who was interviewed in Macas also mentioned two out of these three possible explanations (long distances and cultural preferences), but explained that lack of education is also an important factor among Shuar women who decide to deliver at home.

Summary of qualitative findings

The Shuar interviewees' characteristics are a first important factor to consider when trying to understand how they choose where to give birth, and also their higher risks of suffering from complications that can lead to maternal or infant deaths. Specifically, Shuar interviewees had high frequency of pregnancies that beginning at a young age, which are determinants of maternal mortality according to Stokoe (1991). In addition, more than half of the interviewees had not completed high school, and virtually none have a formal job. Shuar women carried on with their lives performing the same chores during pregnancy as the ones they did before getting pregnant, which in some cases (such as riding a horse or working at a mine) can be considered risky. Therefore, although the sample is not representative of all Shuar women in the province, the analysis of interviewee characteristics provides important insights about Shuar women's living conditions and their potentially higher risk of maternal mortality.

Shuar traditions related to childbirth are found to be important factors that influence the choice of where a woman decides to give birth. It is Shuar tradition to deliver babies at home in a vertical (kneeling) position surrounded by close family members (but no children allowed nearby), and using traditional medicine, such as basil leaf tea to help with the contractions. Shuar women preferences regarding childbirth are influenced by these traditions, which are reflected in the main reasons interviewees gave when explaining why they chose to deliver their babies at home: privacy, comfort/trust, and accompaniment by family members. Yet, it is important to mention that the

influence of Shuar traditions in women's choices of the place for childbirth is less strong for younger women.

The interview findings indicate that the perceptions Shuar women have about health care, in addition to their preferences towards certain traditional practices, are important factors that determine whether women choose to give birth at a hospital instead of at home. Therefore, cultural preferences along with negative perceptions of health care can potentially cause, in Thaddeus and Maine's framework, delays in seeking care. These negative perceptions are based on past experiences and also denote important aspects of the quality of health care received in previous encounters, the power relationships between medical personnel and Shuar patients and violations of human rights (e.g. doctors performing a tubal ligation without the patient's knowledge and consent). Also, although the opinions of family members may be considered when making a decision, in most cases it is ultimately the pregnant woman's decision that matters most when choosing the place of childbirth. Lastly, distance to the nearest health facility is also a factor that influences the choice of home delivery over institutional delivery, and can be related to both a delay in seeking care, and a delay in reaching care.

Quantitative Analysis

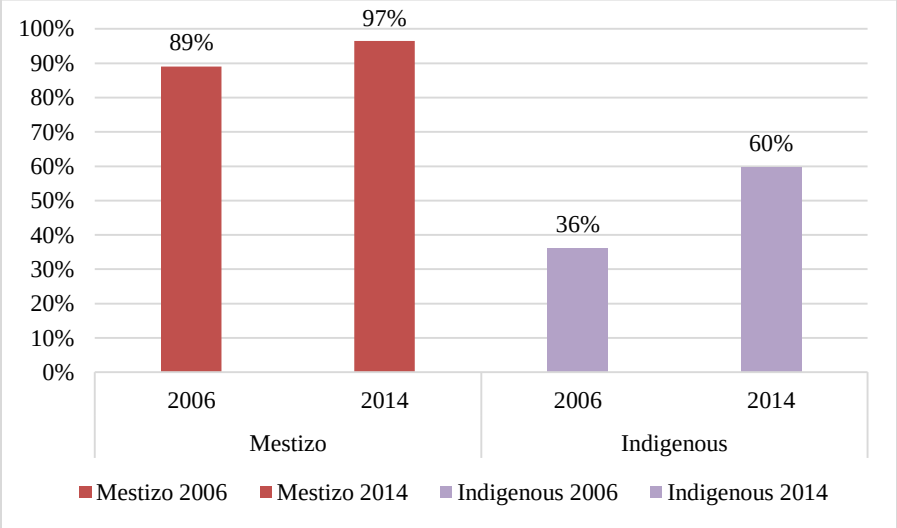
This section presents the findings of the quantitative analysis conducted, using ECV 2013-2014 survey data, to determine the main factors associated with institutional delivery in Ecuador. First, this section briefly describes the persisting gap in access to health care during childbirth between mestizo and indigenous women. Second, this section presents the results of the cross-section Linear Probaility Model (LPM) and Probit analyses conducted to determine the factors that drive or deter institutional delivery. Lastly, a short summary of the quantitative findings is presented to describe the main factors that influence Ecuadorian women's decisions to deliver their babies at a health care institution.

Gaps in Health Care Access

As mentioned in Chapter 1, in Ecuador, there is a clear gap in institutional deliveries across different

ethnic groups. Figure 4.1 indicates that the percentage of indigenous women delivering their babies at a medical care institution has significantly increased from 2006 to 2014. Yet, there is still an important gap in institutional delivery between mestizo and indigenous women, which raises the question of whether culture has an effect on health outcomes.

Figure 4.1: Institutional deliveries by ethnicity in Ecuador (2006 and 2014)



Source: SIISE using ECV 2006 and ECV 2013-2014

Institutional Delivery Linear Probability Model and Probit Analysis Results

Using data from the Ecuadorian Survey of Living Conditions (ECV) 2013-2014, an Ordinary Least Squares regression analysis (Linear Probability Model) was conducted to analyze the determinants of institutional childbirth in Ecuador. The regression analysis indicates that the probability of institutional childbirth is lower for indigenous, poor, rural, high parity and Amazonian women. On the other hand, women from other ethnicities, who are older, are more educated, who have gone at least once to an OBGYN checkup, and who know about the free maternity law (LMGYAI) have a higher probability of giving birth at a health facility, instead of at home. The quantitative results indicate that, similar to Exavery's (2014) findings in Tanzania regarding women of *Sukuma* ethnic background, indigenous women have a lower probability of giving birth at a medical facility even when controlling for other important determinants. Therefore, it appears that, in Ecuador, culture is found to play a significant role in the decision of where to give birth.

As mentioned in Chapter 3, five separate specifications were run in order to determine how the

coefficient of interest (indigenous ethnicity) changed when controlling for demographic, socioeconomic, geographic, and health characteristics at the individual level, in addition to health system controls at the province level. As Model 5 in Table 4.5 indicates, even after controlling for other determinants, an indigenous woman has a 26.4% lower probability than a mestizo woman to give birth at a hospital. Although the magnitude of the indigenous variable's coefficient decreases from Model 1 to Model 5 (which includes more controls), it remains negative and statistically significant. Furthermore, apart from the ethnicity variables, there are nine variables that are significantly associated with the choice of institutional delivery.

The results indicate that socioeconomic status and ease of access to health facilities are significant determinants of institutional delivery. As Table 4.5 shows, women in poor households have a 4.7% lower probability of delivering their babies at a health facility than non-poor women, all else constant. In addition, women living in rural areas have a 3.9% lower probability of institutional delivery than women in urban areas, and women living in the Amazon region have 7.6% lower probability of to deliver at a health facility than women residing in the coast region, holding all else constant. This may be, in part, explained by the presumably longer distances that women need to travel to health facilities if they live in rural areas and also due to the more dispersed population in the Amazon region.

Women's age, education, and knowledge of the Free Maternity Law (LMGYAI) are found to be drivers of institutional delivery. As Table 4.5 shows, an increase in 1 year of age increases the probability of delivering at a health facility by 0.6%, all else constant. Also, results show a remarkable incidence of previous exposure to a gynecological checkup: women who had ever gone to an OBGYN checkup had 11.4% higher probability of delivering at a health facility than those who had never done so. Lastly, an increase in 1 year of educational attainment increases the probability of institutional care delivery by 0.3%, holding all else constant. On the other hand, an increase of one additional child (higher parity) reduces the probability of institutional delivery by 4.2%, holding all else constant.

Table 4.5: Regression analysis results on the determinants of institutional delivery

Variable	OLS Regression					Probit
	Model 1	Model 2	Model 3	Model 4	Model 5	
Indigenous	-0.425**	-0.329**	-0.292**	-0.262**	-0.264**	-0.146**
	(0.041)	(0.042)	(0.037)	(0.036)	(0.035)	(0.027)
Afroecuadorian	-0.021	0.008	-0.015	-0.016	-0.011	-0.029
	(0.030)	(0.024)	(0.023)	(0.021)	(0.017)	(0.020)
Other ethnicity	0.022*	0.047**	0.036**	0.035**	0.037**	0.025**
	(0.009)	(0.009)	(0.009)	(0.008)	(0.008)	(0.007)
Educational attainment		0.007**	0.006**	0.003**	0.003**	0.005**
		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Married		-0.004	-0.003	-0.013	-0.013	-0.011*
		(0.008)	(0.008)	(0.008)	(0.009)	(0.006)
Age		0.008**	0.007**	0.006**	0.006**	0.003**
		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
# children		-0.047**	-0.044**	-0.042**	-0.042**	-0.018**
		(0.006)	(0.005)	(0.005)	(0.005)	(0.002)
Household head		0.024*	0.02	0.014	0.015	0.003
		(0.010)	(0.011)	(0.010)	(0.010)	(0.009)
Poor		-0.073**	-0.059**	-0.050**	-0.047**	-0.040**
		(0.013)	(0.012)	(0.010)	(0.010)	(0.005)
Age first child		-0.007**	-0.006**	-0.005**	-0.005**	-0.001
		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Year last childbirth		0.008**	0.008**	0.008**	0.008**	0.007**
		(0.002)	(0.002)	(0.002)	(0.002)	-0.00191
Rural			-0.060**	-0.044**	-0.039**	-0.046**
			(0.012)	(0.010)	(0.011)	(0.010)
Highlands			-0.026	-0.017	-0.026	-0.026
			(0.016)	(0.015)	(0.017)	(0.021)
Amazon			-0.066*	-0.052	-0.076**	-0.061*
			(0.029)	(0.027)	(0.022)	(0.036)
Galapagos			-0.013	-0.018	-0.086	-0.078
			(0.011)	(0.011)	(0.060)	(0.086)
Public insurance				0.003	0.002	0.004
				(0.010)	(0.010)	(0.009)
Private insurance				0.024*	0.023	0.037**
				(0.011)	(0.011)	(0.016)
Knows about Free Maternity Law				0.050**	0.051**	0.037**
				(0.013)	(0.013)	(0.008)
Ever OBGYN checkup				0.117**	0.114**	0.069**
				(0.016)	(0.016)	(0.009)
# of hospitals in province					0	0.000
					(0.000)	(0.000)
Obstetrician rate in province					0.006	0.002
					(0.013)	(0.008)
Doctor rate in province					0.004	0.003
					(0.003)	(0.002)
N	10836	10803	10803	10803	10803	10803
Adjusted R-squared	0.221	0.285	0.296	0.32	0.322	

Significance level: *= p<0.05 **=p<0.01
Robust standard errors in parentheses. Model 5 includes clustered standard errors by province.
Probit results represent marginal effects.
Source: Own calculations using ECV 2013-2014 data

The Probit analysis shows similar results than the LPM model, with the same statistically

significant coefficients (except for the married indicator variable and for age of the respondent when she had her first child), but generally lower marginal effects coefficients.

Summary of quantitative findings

The quantitative results indicate that even after controlling for socioeconomic, geographic and health system characteristics, ethnicity is an important factor that determines whether Ecuadorian women choose to give birth at a hospital instead of at home. Specifically, indigenous women are significantly less likely to deliver their babies at a health facility than mestizo women with similar characteristics. The results show that, in line with Moyer and Mustafa's (2013) systematic review's findings, more children, lower socio-economic status, and rurality are deterrents of institutional delivery, while educational attainment and OBGYN checkups act as drivers of institutional delivery. Lastly, the results further indicate that age and knowledge of the Free Maternity Law are positively correlated with institutional deliveries.

Convergent mixed Methods Analysis and Main Conclusions

Although the quantitative and qualitative analyses are not based on data from the same individuals or same time frames, their results can be compared and integrated in order to uncover the main factors associated with the choice of health facility delivery in Ecuador. In particular, the smaller scale qualitative analysis pertaining to Shuar women helps to shed light onto potential reasons why indigenous women from other nationalities are less likely to choose or access institutional delivery services.

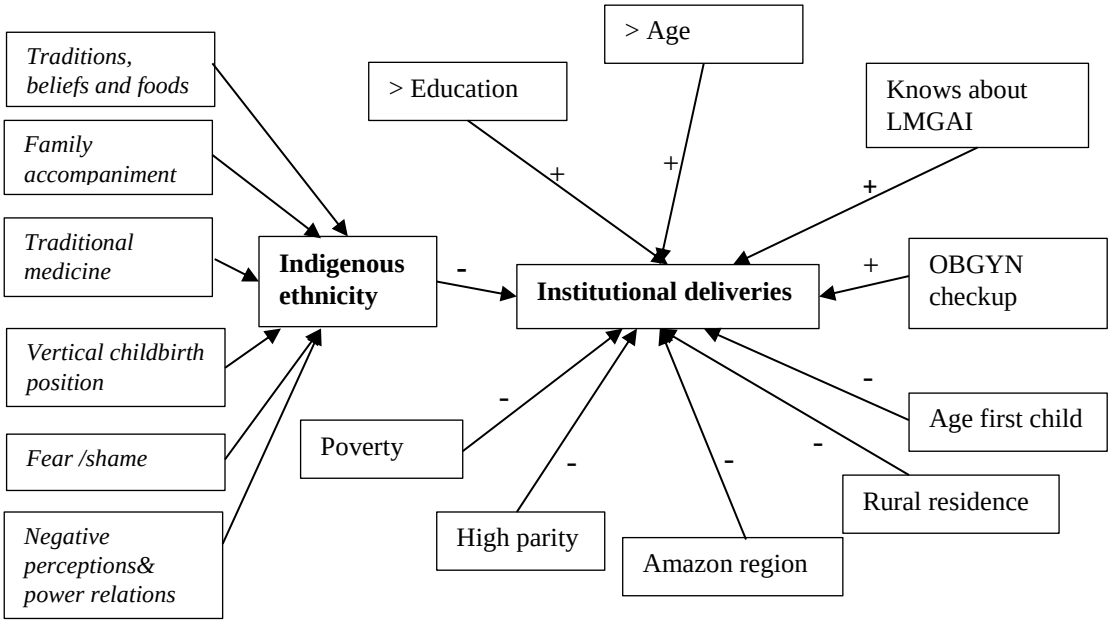
The quantitative and qualitative findings of this dissertation are in line with Stokoe's (1991) model of maternal mortality determinants, which indicated that cultural factors are associated with home deliveries, which are associated with poor maternal health that can lead to maternal mortality. Both quantitative and qualitative results indicate that there are certain cultural factors of Ecuadorian indigenous women that are associated with a lower access to institutional delivery. Yet, Stokoe's model lacks a description of how, why and which cultural factors affect the decisions of where to deliver babies. This is why the qualitative results are integrated with the quantitative results in order

to delve deeper into understanding the factors associated with health facility delivery in a multicultural country like Ecuador.

Figure 4.2 shows a simplified and integrated model to understand the factors associated with the choice of institutional delivery: the determinants of institutional delivery from the quantitative analysis are combined with the conclusions of the qualitative analysis of interviews with Shuar women. The model shows the positive and negative relationships of the institutional delivery determinants from the quantitative analysis in addition to the findings from the qualitative analysis which explain, in some part, why indigenous women might be less likely to deliver their babies at a medical facility.

As the integrated model indicates, indigenous women are less likely to deliver their babies in a medical care facility. This finding from the quantitative analysis is complemented by the qualitative results which indicate certain aspects or factors that explain why indigenous women may be less likely to choose deliver their children at a medical institution and often prefer home childbirth. Certain traditions, such as a strong preference for family accompaniment, vertical childbirth position, and certain traditional medicines were found to influence the decision of several Shuar interviewees to deliver their babies at home. In addition, due to their culture, some women feel shame of being seen and touched by a doctor, and thus, opt to deliver in the privacy and comfort of their homes. The qualitative analysis findings further suggest that, in some cases, fear and negative perceptions of medical care are often founded on past experiences in which doctors or nurses may have left them alone, mistreated them, or preformed unwanted procedures such as episiotomies and c-sections, and even a tubal ligation without consent. Therefore, as Anderson et al. (2003), suggested, these negative interactions in clinical encounters can result in delay or refusal to seek needed care.

Figure 4.2: Integrated model: factors associated with institutional delivery



Since the choice of where to deliver a baby is complex, it is important to mention that the simplified model shown in Figure 4.2 does not display some important interactions between the determinants. For instance, the qualitative analysis revealed that most of the Shuar interviewees had high frequency of pregnancies that were beginning at a young age, and more than half of the interviewees had not completed high school. Therefore, poverty status, low educational attainment, high parity, and ethnicity were interconnected factors that played a role in the complex issue of where a baby is delivered. In addition, the quantitative and qualitative analyses converge in indicating that higher parity (number of children) is negatively associated with institutional delivery. This was evidenced in the interviewee characteristics: the average number of children was higher among the interviewees that gave birth at home, yet in some cases this can be explained by the fact that the older interviewees gave birth at home and had more children.

In conclusion, ethnicity is found to be an important factor that determines whether Ecuadorian women choose to give birth at a hospital instead of at home. Indigenous women are less likely to deliver their babies at a health facility than mestizo women even after controlling for other factors.

The qualitative analysis component helped to shed light into better understanding what some of the underlying reasons are that make indigenous women opt for home deliveries. The qualitative findings indicate that Shuar women's perceptions about health care, in addition to their preferences towards certain traditional practices (vertical childbirth position, family accompaniment, traditional medicine), are important factors that determine whether women choose to give birth at a hospital instead of at home. The integration of the qualitative and quantitative results provide a clearer picture of the complexity associated with choice and access to institutional delivery. Furthermore, these findings suggest that if the underlying reasons why indigenous women choose home deliveries were to be taken into consideration by medical institutions in a culturally competent way, there could be a potential increase in institutional deliveries. The implications of whether culturally adequate child delivery practices improve the proportion of institutional deliveries and health outcomes in Ecuador are further analyzed in the following chapter.

Chapter 5: To what extent do culturally adequate child delivery services improve: the proportion of institutional deliveries, health outcomes and perceptions of health care in Ecuador?

This chapter presents the findings of the qualitative analysis of interviews as well as the findings of the quantitative analysis of surveys and administrative data to address the question raised about health outcomes and perceptions of health care. Since this dissertation employed a mixed methods convergent parallel design, the qualitative and quantitative results are presented in two separate strands of analysis, followed by a unifying conclusion that merges the results by looking at convergence or variation in the data. Therefore, this chapter is divided into three main sections: qualitative analysis, quantitative analysis, and mixed-methods conclusions. Lastly, the key dissertation findings are summarized at the end of this chapter.

Qualitative Analysis

This section presents the findings from the interviews with Shuar women and medical personnel in the Morona Santiago province about their perceptions about cultural adequacy and satisfaction with health services. First, this section presents a brief overview of the available childbirth services in the three sites. Second, the section presents an analysis of the perspectives of medical personnel at different hospitals in the Morona Santiago province in order to understand the different approaches to culturally adequate services at each site. This analysis helps to shed light on how culturally adequate services are being implemented in different places, and the different dimensions of cultural competency. Third, a brief comparative analysis of interviewees' perspectives about the causes of maternal and infant deaths is presented to better understand how medical personnel and Shuar women differ in their opinions about this issue. Fourth, this section presents an analysis of the extent to which Shuar women perceive the medical care services they received as appropriate to their culture. This is followed by a comparative analysis across sites of the reported satisfaction with childbirth services and the places interviewees would recommend for future deliveries. Lastly,

a short summary of the qualitative findings is presented to describe how the availability of culturally adequate (intercultural) childbirth services affects Shuar women's perceptions of health care.

Understanding the context and history of culturally adequate services in the three sites

This first subsection provides a brief review of how culturally adequate services were implemented in public hospitals in Méndez and Sucúa, and about the context and services provided at the Macas General Hospital. This overview provides important insights regarding the differences in the way culturally adequate services are provided in public hospitals of three different cities within the same province, which may explain further differences in the utilization of services and patients' perception of the quality of care.

Méndez

The public hospital at Méndez is one of the pioneers in the adaptation of childbirth services in Ecuador. According to one of the health care staff interviewees at the Méndez hospital, in their aim to increase the proportion of institutional births, a group of two doctors and one nurse started researching alternative ways for "humanized" childbirth services since 2003. This small group of medical professionals conducted interviews and focus groups with Shuar women, and also performed different types of adaptations to the equipment[22] so they could help women to deliver in a vertical position. The interviewee explained that UNICEF then supported them to initiate a pilot project in 2004 and 2005. With UNICEF's funding the hospital was able to provide culturally appropriate clothing for women in labor, train medical personnel, and also adapt the hospital's equipment with a floor pad and grab bars for vertical delivery. Yet, it was only in 2006 when the provision of culturally adequate (or "humanized", in the interviewee's words) childbirth services were institutionalized at the hospital.

Although the provision of culturally adequate childbirth services were institutionalized at the Méndez hospital in 2006, one interviewee explained that there have been some implementation

[22] The interviewees tried adapting the beds, using different materials for floor pads/mats, and even built an adapted birthing bed for births in vertical position.

problems and setbacks. The interviewee explained that one of the doctors who was part of the initial team that started the pilot project became a detractor of the initiative later. The interviewee explained that this was due to "a deep resentment since UNICEF and some public health managers did not support the initiative at the very beginning but in the end received all the praise and glory". So, due to his perceived lack of acknowledgement of all the work that had been done by the initial group of medical personnel that started the initiative in 2003, the doctor (allegedly) not only stopped promoting the provision of intercultural childbirth services, but also started campaigning against it within the hospital and with new resident doctors. In addition, due to a lack of stable sources of funding, some intercultural services, such as hiring a translator, and maintaining the traditional medicine garden and the "waiting house"[23], have been interrupted. Furthermore, one of the doctors in charge of delivering babies explained that currently, women are not asked about the birthing position, but if they request a certain position they are given the option. In some cases when the doctors perceive that the woman is not collaborating, they ask them if they would prefer an alternative position. Yet, the nurse who was interviewed in Méndez indicated that they ask women about the position for childbirth. Thus, although the hospital at Méndez was one of the earliest places where culturally adequate childbirth services were being provided, due to several institutional problems at the hospital, and to resentment among the promoters of culturally adequate services in the province, the provision of these services at the Méndez hospital has been intermittent and very much dependent on the will of the medical personnel in charge.

Sucúa

The Sucúa hospital started to provide culturally adequate ("humanized") childbirth services in 2008. According to the doctor who was interviewed at Sucúa, the project started in 2007 with a

[23] The "waiting house" (or *casa de espera)* is like a small apartment room attached to the hospital where women in early stages of labor and who lived far away could stay instead of returning home to wait.

focus on training health personnel to provide a more humanized[24] service to patients in labor. One of the interviewees explained that what motivated medical personnel to seek other ways to provide childbirth services was a 1995 study conducted by the Shuar Federation and UNICEF, which found that only 1 out of 10 Shuar women in rural communities delivered at the hospital. Therefore, the initial promoters of the initiative started to talk with Shuar patients about their needs and about potential ways of adapting the services to be adequate to Shuar traditions. At first, the hospital did not have resources, but they later received the support from the Province Health Directorate, and training support from UNICEF. The Sucúa hospital medical personnel received training from health staff from the hospital in Méndez, and also from a private clinic in Quito (*Clínica La Primavera*). The hospital began training to sensitize medical personnel, but could not, initially, provide culturally adequate childbirth services do to the lack of adequate infrastructure, equipment, and culturally appropriate clothing for patients. So, the provision of culturally adequate services started to be implemented little by little since 2008 and was completely institutionalized in 2010 following the publication of MSP's Technical Guidelines for Culturally Adequate Child Delivery Services (2008) and the inauguration of the new hospital facilities. The hospital has equipment and infrastructure to allow for different positions and preferences during childbirth (floor pad and grab bars, wooden chair, and suspended cloth for vertical childbirth). Moreover, there are TV screens at the hospital's waiting room which provide information about the different birthing positions that women are able to choose from. According to the resident doctor who was interviewed at Sucúa, nowadays, there is a high number of women that want to deliver their babies at the Sucúa hospital; "some women even come from Macas, Méndez and Limon because they like the quality of the services at the Sucúa hospital."

[24] "Humanized" childbirth is a term that was used throughout several interviews with medical staff. The main focus is to provide high quality care which includes treating patients with respect and no shouting, avoiding routine vaginal examinations, and providing adequate clothing.

Macas

The new Macas General Hospital was inaugurated in 2011, and it treats patients from several cantons in the province. Before the inauguration of the new facilities, the old hospital had less capacity to receive patients. The doctor who was interviewed said that, even though the hospital is new and has more capacity, there is still a shortage of beds. Moreover, the doctor indicated that the hospital did not have a very good reputation (lack of trust) because there were some maternal and child deaths in the past. He explained that this has changed in the past 5 years, since the inauguration of the new hospital. Regarding the context and main issues among people who live near Macas, the doctor raised concerns about malnutrition, economic conditions, and parasites among Shuar patients. The doctor raised concerns about teenage pregnancy in the population, and the number of children women usually have (in particular among Shuar women).

The Macas General Hospital does not have infrastructure or equipment for vertical childbirth, which is one of the main issues related to its lack of provision of intercultural childbirth services. The doctor explained that patients usually deliver in a horizontal position, and that about only 1% of births occur in a vertical position. Apart from their lack of equipment and infrastructure to provide vertical childbirth services, the hospital does not follow the 2008 Guidelines for Culturally Adequate Childbirth services with respect to routine vaginal examinations. On the other hand, the hospital does allow family members to accompany patients during childbirth.

Understanding medical personnel's perceptions about Shuar women and cultural competency

This sub-section presents medical personnel's perceptions about Shuar women, and how they relate to the different dimensions of Campinha-Bacote's (2002) framework of cultural competency. First, the results indicate that there is room for improvement regarding medical personnel's cultural awareness, especially regarding self-reflection of professional and cultural biases that may affect how medical encounters occur. Second, the findings suggest that, although the process of gaining cultural knowledge (especially regarding alternative birthing positions) is lacking at medical schools, medical personnel find ways to gain knowledge through their medical encounters and from

other colleagues on the job. Third, the interviews provide examples of how cultural skill is enhanced by medical personnel in Sucúa and Méndez, who often go beyond collecting cultural data in order to provide culturally appropriate services. Fourth, the interviews reveal that there are ample opportunities in all three hospitals for the refinement of previously held beliefs through cross-cultural interactions in order to improve patients' wellbeing. Yet, these frequent cultural interactions may not be sufficient to improve cultural competence, since this will also depend on the medical personnel's desire to become more culturally competent. Thus, the provision of culturally adequate childbirth services not only depends on the availability of adequate equipment and infrastructure, but also on personal and institutional factors. This is an important finding because the way MSP's Intercultural Health Division monitors the provision of culturally adequate services in terms of the availability of equipment and infrastructure (which is also how this dissertation operationalized the treatment variable in the quantitative analysis).

Cultural Awareness

The interviews with health personnel revealed some issues related to their cultural awareness, which, according to Campinha-Bacote (2002), involves a process of self-reflection about one's biases about patients of other cultures and the self-exploration of one's own cultural and professional culture. The first issue is related to negative stereotypes and negative notions about Shuar women being perceived as more stubborn and less cooperative. The second issue is related to the power relationships between health care personnel and patients, in which some medical personnel take a paternalistic stance that does not allow for an empathetic connection of mutual understanding and learning.

The interviews with medical personnel at the three hospitals revealed certain beliefs and stereotypes about Shuar women. Specifically, the medical personnel explained that Shuar women prefer vertical childbirth positions, and were perceived as stubborn, and as less cooperative than mestizo women. This is important since medical personnel's perceived differences in the behavior of Shuar

women may affect how they interact with patients. Moreover, these negative notions about Shuar women being stubborn and less cooperative, as Geiger (2001) explains, may affect how future clinical encounters occur and also influence medical personnel's decisions. This may be a problem if what medical personnel consider "stubbornness" hides a different kind of issue, such as poor communication or cultural insensitivity. Contrasting the more general perceptions about Shuar women, there are some differences in how some doctors and nurses perceive the behaviors of Shuar women during labor. For instance, while the doctor at Méndez hospital indicated that Shuar women usually complain more about the pain during labor, the nurse at Méndez indicated that Shuar women are stronger than mestizo women. Regarding this last characteristic, the doctor at Méndez hospital commented that, "Supposedly they [Shuar women] are more resistant to pain, but in practice I have not seen this." On the other hand, he explains that mestizo women are "lazier": they prefer horizontal childbirth or c-sections. These beliefs and stereotypes about Shuar women seem to reflect medical personnel's low level of self-reflection on their own culture and reveal potential biases towards patients of other cultures, which, in Campinha-Bacote's framework, negatively reflect on the medical providers' cultural awareness.

The interviews with medical personnel at Macas hospital provide important insights about the dominance relationship between clinicians and Shuar patients, and some clear examples of the low level of self-exploration of their professional culture. In particular, the interviews revealed the medical personnel's perception of their own role as "educators" and ultimate decision-makers in the context of medical encounters. For instance, although the doctor who was interviewed at Macas explained that the choice of position during childbirth is of mutual accord between the doctor and patient, it was clear that the decision was actually a directive from the doctor which the patient has to follow. He explicitly indicated that the doctor explains and directs patients to lay down in the bed, and the patient follows the doctor's directions. Moreover, when a nurse who was interviewed at the Macas hospital was asked about whether Shuar women had different preferences, her answer

contained an intrinsic belief regarding how the medical provider needs to educate the patient about they should behave. The interviewee's answer was, "No [preferences are not different]. They always abide to what we teach (educate) them". As these two cases illustrate, the low level of self-exploration of medical personnel's professional culture, and the inherent way in which patient-provider power dynamics are conceived, may negatively affect the provider's cultural awareness and cultural competency. Furthermore, dominance relations between medical personnel and patients may reflect historical power relations (as Salaverrry 2010 suggests), and may become an obstacle to mutual learning and to the development culturally congruent care, which occurs when the nurse and the patient jointly design a different care style for the well-being of the patient using both common and professional knowledge (Sitzman & Eichelberger, 2010).

Cultural Knowledge

The interviews with medical personnel revealed that formal medical training on alternative positions for childbirth was scarce or non-existent, which is an issue that affects medical personnel's cultural knowledge. Most of the interviewed medical personnel were not originally from the Morona Santiago province and all of them obtained their professional degrees in Ecuador's major cities, or even abroad. For instance, the resident doctor at Sucúa studied in Quito and later in Cuba, where she was taught only about horizontal childbirth positions. Similarly, the doctor who was interviewed in Méndez is originally from Guayaquil, so he did not have previous knowledge about Shuar traditions. The interviewee mentioned that his university training about childbirth was always focused on the horizontal position, and that he only learned about alternative childbirth positions when he came to Morona Santiago. Therefore, the medical personnel's process of obtaining an educational basis about Shuar beliefs, traditions, and issues related to childbirth only started once they arrived to their current work places. In most, cases, the medical personnel learned about vertical childbirth positions through their own practice and from colleagues with experience. Nevertheless, it is worth mentioning that some of the medical personnel had also received

specialized training in intercultural births by the Ministry of Public Health in recent years.

With respect to knowledge about Shuar culture, the interviewed medical personnel across all three sites had knowledge about Shuar women's preferences during childbirth, particularly regarding the vertical position for childbirth[25]. Yet, it is important to mention that this knowledge is rarely put into practice in Macas, since there is no adapted infrastructure or equipment. Moreover, the interviews with medical personnel also reflected their knowledge about Shuar culture, traditions and living conditions. For instance, the doctor who was interviewed at the Sucua hospital explained that she knew about certain procedures regarding Shuar traditional births at home, such as the fact that they cut the umbilical cord with a piece of *Guadúa* wood (although she mentioned she did not know the specific detailed of how the procedure is done). In addition, nurses at Sucua and Méndez had ample knowledge about traditional medicine and foods.

Cultural Skill

While the medical personnel at Macas explained that they do not provide any different treatment or childbirth services for Shuar women, some of the interviews in Sucúa an Méndez revealed how medical personnel at these sites go beyond collecting cultural data in order to provide culturally appropriate services (which implies cultural skill). For instance, the nurse in Sucúa not only had knowledge about Shuar women's tradition of drinking basil leaf tea during labor in order to increase the contractions, she also puts this knowledge into practice. The nurse mentioned that since the medical personnel knows about Shuar traditions regarding basil leaf tea, the hospital offers patients an adequate dosage of basil leaf tea when the timing is right. In addition, the medical personnel at the Sucua hospital indicated that they usually ask the patients if they want to keep the placenta, since Shuar people often bury the placenta according to their traditions. These practices at the Sucua hospital goes in line with Flores' (2000), recommendation regarding the provision of non-

[25] The only interviewee who indicated that there was no difference in the preference regarding the position of childbirth was the obstetrician in Sucua. She explained that, "nowadays more mestizo women are opting for vertical childbirth as well."

judgmental and sensitive approach in which the health providers learn about a patient's beliefs and tries to replace harmful remedies (such as drinking too much basil leaf tea in early stages of labor since it can produce fetal stress) with harmless ones that are in line with the individual's beliefs (such as providing adequate amounts of basil leaf tea at the hospital when the patient is more dilated, and offering the patient to take the placenta).

Cultural Encounters

There are various opportunities for health personnel to become more culturally competent through cross-cultural interactions in the three hospitals (Macas, Méndez and Sucua) since a sizeable portion of patients are indigenous. For instance, according to the nurse interviewed at Macas, around 45% of the patients in labor are Shuar, Achuar or from other indigenous groups. Moreover, in Méndez, the nurse indicated that 6 out of 10 births are from indigenous. Yet, the extent to which cultural encounters may refine previously held beliefs will depend on the degree of cultural awareness and openness to learn from others. For instance, the nurse who was interviewed at the hospital in Méndez provides an example of how cultural encounters might refine previously held beliefs and can enhance medical personnel's knowledge about Shuar traditional medicine and health habits. The nurse has gained ample knowledge about Shuar food traditions, and explained that she has learned that Shuar women get their nutrients and vitamins from the fruits and vegetables that are available in their surroundings. Therefore, the nurse indicated that now she knows that Shuar people do not need to be required to eat the same type of diet that is recommended for patients in general. She further explained,

> "Shuar people make soups with yucca leaves, which are a great source of vitamins. Here I would eat chicken, and in the Shuar culture they eat yucca leaves, but with the same amount of nutrients... So we researched a little because they (Shuar patients) come here and tell us that they do not have money to buy chicken and rice. In their plots of land they have sweet potatoes, yucca and other nutritious foods, so they can get their nutrients from things they have available in their homes.... For example, *guayaba* fruit is one of the greatest sources of vitamin C. Before, we used to think that it was the oranges, but *guayaba* has much more vitamin C. These are things we usually don't know."

Thus, the frequency of cross-cultural interactions can be associated with increased cultural

knowledge, the refinement of previously held beliefs, and the construction of new shared knowledge that can help to improve patients' wellbeing. Nevertheless, it is important to consider that frequent interactions between medical personnel and Shuar women may not be sufficient to improve cultural competence. Medical personnel's cultural competency is also dependent on the awareness of cultural differences, openness to accept other realities, and the ability to put the cultural knowledge into practice.

Cultural Desire

There were some perceived differences among medical personnel's perceived cultural desire, which according to Campinha-Bacote (2002), is in the center of the process of cultural competence since it reflects how medical personnel "want" instead of "have" to become culturally competent through cultural awareness, skill knowledge and encounters. Although it is hard to assess the degree of cultural desire, the interviews with personnel at the Macas hospital seemed to reflect a lower degree of aspiration towards becoming more culturally competent. This was specially reflected in the way the doctor at Macas responded to questions regarding intercultural childbirth services. The doctor explained that he does not see any particular benefit in the provision of intercultural services, and that at the Macas hospital everyone is treated in the same way regardless of their ethnicity. Therefore, it can be assumed that cultural desire is low for someone that does not believe that culturally adequate childbirth services do not have benefits.

On the other hand, medical personnel at the hospital in Sucúa and Méndez had positive perceptions about culturally adequate childbirth services, which may reflect medical personnel's desire to continue offering these services. For instance, the doctor at the Sucua hospital explained that she thinks that providing intercultural childbirth services is beneficial since it can reduce the stress levels of women in labor, in particular among Shuar women. The doctor indicated that once Shuar women know they have the option to deliver their babies in the position of their choice, they are less stressed since they know they can deliver in a comfortable position that is adequate to their culture and traditions. The nurse and doctor at Méndez also indicated that intercultural childbirths

are not only good for the patient, but it also improves the women's disposition to collaborate with the doctors. Furthermore, when I asked the doctor at the Sucúa hospital if she would recommend that I give birth in a vertical position, she said yes. She explained that it is quicker and that neither I nor the baby will suffer. Thus, this acknowledgement of the potential benefits of vertical birthing positions seem to reflect a positive predisposition of medical personnel at Sucúa and Méndez towards wanting to continue with the provision of culturally adequate services.

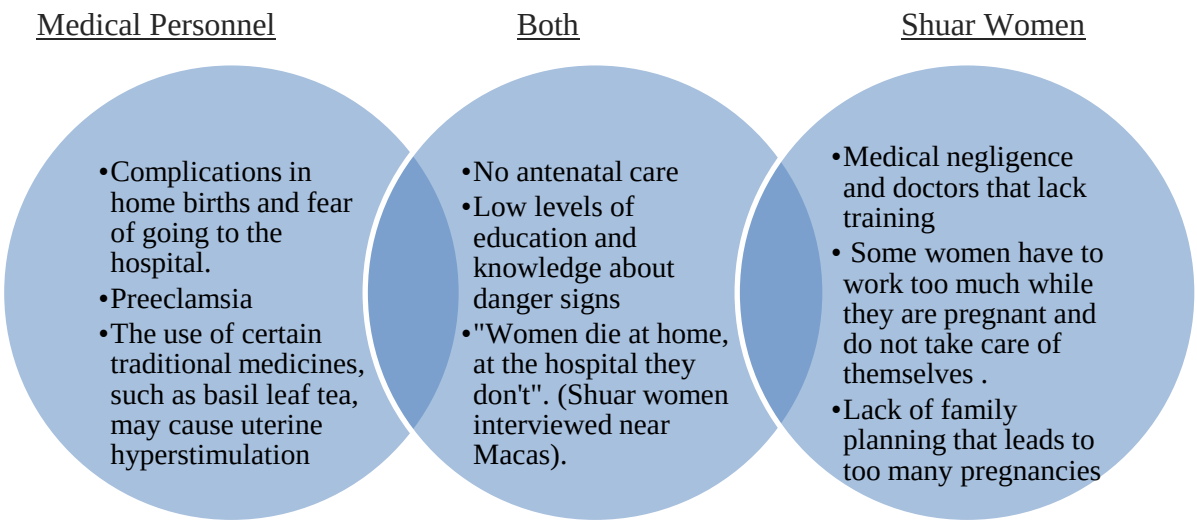
In conclusion, analyzing the dimensions of the process of cultural competency using Campinha-Bacote's (2002) framework provides important insights about the different aspects and complexity involved in the provision of culturally adequate childbirth services. The findings indicate that most of the knowledge about patients' culture and traditions is not gained through formal medical training, but through frequent cross-cultural medical encounters. In addition, there are clear examples in Sucúa and Méndez about how the knowledge about Shuar traditions has been put into practice at the hospitals in order to provide intercultural medical care which integrates traditional and professional knowledge. Lastly, cultural awareness and cultural desire play key roles in how medical personnel self-reflect about their own biases, and therefore want to provide culturally adequate services that are different from what they had learned in their professional training within their own cultures.

Interviewees' perspectives regarding the reasons behind maternal deaths

Although medical personnel and Shuar women agreed on some of the potential causes of maternal and infant deaths, there are also different explanations about why these deaths may occur which reflect the interviewees' different backgrounds. Medical personnel and Shuar interviewees explained that the main causes of maternal mortality are related to the lack of antenatal care, and to the prevalence of home births. Yet, as Figure 5.1 shows, the responses also differed between medical personnel and Shuar women. For instance, while medical personnel's responses were focused on medical complications such as sepsis and preeclampsia, which could be prevented

through the 'adequate' use of medical services (antenatal checkups, institutional deliveries, and no use of traditional medicines), Shuar women's responses were more focused on the living conditions surrounding pregnant women. Moreover, some of the Shuar interviewees believed that maternal deaths occur due to poor medical training and due to doctor's negligence. On the other hand, the finding revealed that some of the medical personnel put some of the blame of maternal deaths on the patients' culture and beliefs. Specifically, one of the nurses implicitly put the blame of the occurrence of maternal deaths on the assumption that indigenous women's delay seeking professional care due to "too many beliefs in their culture". Therefore, although medical personnel and Shuar women agree on the how lack of antenatal care may be related to maternal deaths, the way how they explain the occurrence of maternal deaths differs and reflects different assumptions about the issue.

Figure 5.1: Interviewees perceptions about the causes of maternal and infant deaths



Source: Interviews with medical personnel and Shuar women from the Morona Santiago province.

Understanding Shuar women's perceptions about cultural the appropriateness of childbirth services at the hospital

Shuar interviewees who delivered at the hospital mentioned some factors they felt were not

appropriate to their traditions regarding childbirth. The delay in bathing newborns, the lack of privacy, language differences, lack of care and trust, and the type of food provided at the hospital were mentioned by the interviewees as elements at the hospital that they felt were not appropriate to their culture. Yet, there are some differences across sites, and there are some interviews who reflect positive perceptions of the intercultural services at the Sucúa hospital. In addition, some interviewees expressed their discomfort with vaginal examinations.

Macas

For Shuar women living near Macas, the lack of privacy at hospitals is considered as something that is not culturally adequate during childbirth. When asked about what factors were not appropriate to Shuar culture at the hospital, the interviewee who had her first child at the Macas hospital and the second one at home indicated that she felt there was a lack of privacy. Shuar women traditionally give birth at home surrounded by a couple of close family members (spouse and/or mother/mother-in-law/aunt/sister). Therefore, having several doctors and nurses present during labor and childbirth was perceived to be culturally inappropriate. The interviewee also explained that it would be important to have a Shuar translator for women who do not speak Spanish, and that it is also important to allow women to choose the position in which they give birth.

Méndez

There are several examples from the interviews with Shuar women living near Méndez that indicate there are some aspects of the hospital medical care which were considered not culturally appropriate. Two interviewees mentioned that the food at the hospital is not appropriate to Shuar culture. Specifically, one interviewee (25 years old) mentioned that the food at the Macas hospital "almost killed her." Also, the 45 year old interviewee from Nungande indicated that, at the Méndez hospital, they gave her milk, which, according to Shuar traditions, should not be consumed the days following childbirth "because it causes diarrhea". Another factor that is not considered culturally adequate for Shuar women is that babies, at the hospital, are not bathed right away, while Shuar women in their traditions, prefer to bathe their babies as soon as possible. According to an

interviewee, at the hospital, babies are bathed one day after birth. Lastly, two interviewees mentioned that hospital care in childbirth is different to the one received at home. The interviewees said they did not trust the medical personnel, as they would trust their family members, and that family members take better care of them.

Sucúa

There were some interviewees who reported positive perceptions of the intercultural services provided at the Sucúa hospital. Some interviewees mentioned that the food that was provided at the hospital was adequate to their traditions, and that the hospital also allowed them to bring food from home. One interviewee said that everything was appropriate to her culture and that nothing was missing to make her experience more adequate. Yet, one of the interviewees mentioned that some food and drink was not appropriate:

> "We do not eat 'white chicken'[26] because it gives us diarrhea, and that is what happened to me at the hospital. I ate it because I was hungry, but we [Shuar people] don't drink pineapple juice either. We don't drink all kinds of juice. I didn't drink the pineapple juice because it can cause diarrhea when the baby grows to be 1 year old."

So, although there are some conflicting accounts about the appropriateness of the food provided at the hospital (which may be due to different experiences and preferences), there were widespread positive perceptions of the cultural adequacy of childbirth services at the hospital in Sucúa.

In some cases, the positive or negative perceptions of the intercultural services were not founded on personal experiences, but on experiences of family members. For instance, the 29 year old interviewee from Asuncion, who delivered her 5 children at home, has a positive perception of the intercultural childbirth services at the Sucúa hospital because her sister gave birth at the hospital. She explained that her sister gave birth at the hospital because she is a "coward that had fear of homebirth." So, even though the interviewee mentioned that giving birth at the hospital never crossed her mind, she now has knowledge about the availability of culturally adequate services,

[26] According to various interviews, Shuar woman prefer to eat 'criollo' chicken, which is free range farm chicken raised by themselves. When they talk about 'white chicken', they are referring to chicken that were not raised in a farm (chicken from processing factories).

and a positive perception of the hospital and the intercultural services they provide. The interviewee indicated that,

> "nowadays there is the option of ancestral childbirth, I believe. When the woman is about to give birth, the husband has to come in to help, and there is also something available for the woman to grab in order to deliver the baby in a kneeling position... She [the interviewee's sister] told me that giving birth at the hospital was a beautiful experience because they helped her grab the baby and it was quick. They gave her some injections for the hemorrhage to stop, and she recovered in three days. She told me that everything was a nice experience."

Does the availability of culturally adequate services affect women's reported satisfaction with health care and their future choices?

A comparison across sites and across time helps to explain whether the availability of culturally adequate (intercultural) services at the Sucúa and Méndez hospitals (since 2008 and 2006, respectively) had an effect on women's satisfaction with childbirth experiences and their future choices of medical care.

Satisfaction

There are some differences in the level of satisfaction between women who delivered their children at home, and women who delivered their children at the hospital depending on the availability of intercultural services. In general, women who delivered at home appear to be more satisfied[27] with their childbirth experience than those who delivered at the hospital. Among those interviewees who delivered at a hospital (at least once), the satisfaction scores were higher at sites where intercultural childbirth services were available.

Satisfaction with childbirth is high for women who experienced home births, regardless of the availability of intercultural childbirth services at the hospital. This can be observed in Table 5.1, which shows that the scores reported by the interviewees' on their satisfaction with childbirth are higher among the interviewees who delivered at home. Specifically, the satisfaction with home childbirth experience is high (5/5 for all cases except one, which is 4/5) across sites and time. The main reasons given for a high score on their satisfaction with their childbirth experience were the

[27] Interviewees were asked to rate their satisfaction on a scale of 1 to 5, and to explain why

privacy, trust and family accompaniment that they had when delivering at home.

While the availability of intercultural childbirth services at the hospital did not affect the satisfaction scores of women who delivered at home, there are some differences in the satisfaction scores of those women who delivered at a medical institution. As Table 5.1 indicates, the satisfaction scores from interviewees who delivered at the hospital vary, depending on the availability of intercultural childbirth services.

Table 5.1: Satisfaction with childbirth experience by place of delivery and implementation of intercultural childbirth services

	Hospital		**Home**	
Availability of intercultural childbirth services	**Services not available (before)**	**Services available (after)**	**Services not available (before)**	**Services available (after)**
Sucúa	5/5: satisfied because "they saved her". The clinic was a safer option since there were complications (52 year old interviewee, c-section). 5/5: satisfied because they took good care of her (39 year old, c-section). 3/5: he was not allowed to accompany his wife (34 year old male)	4/5: " the only thing missing was a TV" (25 year old) 5/5: "the delivery experience was wonderful", the doctors were kind, and she recovered fast (29 year old interviewee from Santa Marianita)	5/5: she likes the privacy at home (52 year old)	5/5: at home, he was able to be part of the experience and he also liked the privacy (34 year old male) 5/5: chose to deliver at home because she felt safer there, and because it is Shuar tradition (31 year old)
Méndez	4/5: the doctors were not present at the moment she delivered her baby, they had left her alone (45 year old woman).	4/5: at the medical center she felt she did not trust and could not communicate well with the doctor (38 year old) 4/5: they allowed a family member to accompany her (25 year old interviewee from San Vicente)	5/5: she has more confidence at home (38 year old)	5/5: her family took good care of her, she did not suffer much, and labor was quick (31 year old)
Macas (no intercultural services available)	3/5: 25 year old interview from San Vicente explained that she had a c-section and the doctors left her alone to take care of herself 5/5: 19 year old interviewee explained that the medical personnel took good care of her 2/5: 30 year old interviewee explained that she did not like the way they treated her: she had to go several times to the hospital because she was sent back, and she also did not like the vaginal examinations		5/5: 54 year old interview explained that she was happy with her 10 home deliveries because nobody touched her. 4/5: 30 year old interviewee explained that she was happy to deliver at home and then the doctor came to check and see that everything was okay	

Note: Wording of question: "Please describe how satisfied you were with your childbirth experience on a 1 to 5 scale, and why".

Table 5.2 shows that the satisfaction scores were lower for interviewees who delivered at hospitals when/where intercultural services were not available. On average, the satisfaction scores are higher (4.3 vs. 3.9) among the interviewees who delivered their babies at hospitals with intercultural childbirth services available, Sucúa and Méndez after 2008 and 2006 respectively, than among those who delivered their babies either at Macas General Hospital, or at the hospitals in Sucúa and Méndez before the implementation of intercultural services. Also, the lowest satisfaction scores came from interviewees who delivered their babies at the Macas General Hospital (average score of 3.3), where intercultural childbirth services are not yet available. The main reasons why interviewees reported not being completely satisfied with their institutional childbirth experiences include vaginal examinations, not being allowed to be accompanied by a family member, and doctors leaving them alone during labor.

Table 5.2: Average satisfaction scores of interviewees who delivered at least one child at the hospital by nearest city and availability of culturally adequate services (on a 1 to 5 scale) N=11

Nearest city	Culturally adequate services	
	Not available	Available
Sucúa	4.3	4.5
Méndez	4	4
Macas	3.3	NA
Total	**3.9**	**4.3**

An insightful comparative perspective about satisfaction with medical care at different institutions comes from the 25 year old interviewee from San Vicente who delivered her children at the Macas, Méndez and Sucúa hospitals. Regarding the intercultural services provided, she was not informed or given the option to choose the position she preferred to give birth at the Méndez hospital when she delivered her child in 2011, even though intercultural services were supposed to be available there. On the other hand, the interviewee was informed of the several positions she could choose to give birth at the Sucúa hospital in 2013 (she chose a horizontal position). Yet, the interviewee explained that her husband and sister were not allowed to accompany her. This interviewee's

experiences illustrate the differences in implementation of intercultural services across different hospitals. This is an important insight, since it indicates that the availability of equipment and infrastructure to provide intercultural services vary across hospitals, and the provision of intercultural services is very much dependent on the medical personnel.

Regarding cultural adequacy, the interviewee who delivered at the three different hospitals explained why she thinks that women are better taken care of when they give birth at home than at the hospital:

"At the hospital it is different than at home. At home there is more care. More care is needed [at the hospital]. Sometimes the doctors only wait until the woman delivers and then get rid of her and discharge her. At my home, my mother and husband take care of me and bathe me."

Yet, the interviewee said she would want to give birth at a hospital in the future, because she is afraid to deliver at home. Thus, even though some women would prefer to receive better care during childbirth while they are at the hospital, they might be resigned to whatever is available, because they fear the complications that may be related to home birth.

In conclusion, the availability of intercultural services at the nearest hospital appears to have a positive influence on women's satisfaction with childbirth services among those who experienced institutional childbirth. While the availability of intercultural childbirth services at the hospital did not affect the satisfaction scores of women who delivered at home, the satisfaction scores are higher among the interviewees who delivered their babies at hospitals with intercultural childbirth services available. When the intercultural services were not available, the reasons cited for not being completely satisfied included being left alone, lack of family accompaniment, and vaginal examinations. On the other hand, when intercultural services were available, interviewees mentioned being satisfied since they were allowed to be accompanied by family members, and due to the good quality of care provided by the medical personnel.

Place Interviewees Recommend for Childbirth

Analyzing where interviewees would choose to give birth on a future occasion, or where they would

recommend other women to give birth, is important, since it provides a perspective on women's future potential decisions. According to the interviewees' responses regarding the place they would choose on a future occasion (or that they would recommend to their friends or family members), there appears to be a pattern that indicates that women who live near a hospital with intercultural childbirth services are more likely to recommend hospital delivery. As Table 5.3 shows, 75% of interviewees who delivered their babies at a hospital with available culturally adequate childbirth services recommend institutional childbirth, while, among those interviewees who delivered their babies while intercultural services were not available, only 40% recommend institutional childbirth. It is important to mention that the small sample size does not allow for a more thorough quantitative analysis of these trends, yet these findings are still relevant because they suggest some important patterns in the interviewees' responses.

Table 5.3: Place for childbirth interviewees would recommend or would go in the future, by place of delivery

Interviewee category	Place interviewee would recommend or would go in the future		Total	% Recommends Hospital
	Home	Hospital		
Place of Delivery				
Home	3	0	**3**	0%
Hospital	1	3	**4**	75%
Both (home & hospital)	3	4	**7**	57%
Nearest City				
Macas	2	1	**3**	33%
Sucúa	3	3	**6**	50%
Méndez	2	3	**5**	60%
Availability of intercultural childbirth services at hospital				
Not available	6*	4	**10**	40%
Available	1	3	**4**	75%
Place of Delivery and availability of intercultural services				
Home	3*	0	**3**	0%
Hospital/Not available	3	4	**7**	57%
Hospital/ Available	1	3	**4**	75%
TOTAL	**7**	**7**	**14**	**50%**

*2 of these interviewees delivered their children at home both before and after the intercultural childbirth services were available at the nearest hospital.

While all interviewees who experienced home births would recommend giving birth at home, it was surprising to learn that some interviewees who delivered at a hospital would also recommend

home birth. Yet, there are some differences when one disaggregates by availability of intercultural services at the hospital. Specifically, among interviewees who delivered their babies at the hospital, there is a larger proportion who would recommend institutional childbirth when intercultural services were available than when they were not (75% vs 57%). This is also reflected when disaggregating by nearest city: there is a higher percentage of interviewees who recommend institutional childbirth at Sucúa and Méndez (where intercultural services are available) than at Macas.

The main reasons why Shuar women who gave birth at home recommend home births are related to traditions and comfort, and to the good care they received while delivering their babies at home. "I feel better at home. I am calm and comfortable. I am better taken care of, and I have everything." (31 year old near Méndez). The strong preference for home birth is related to the kind care a woman receives at home. Furthermore, a 54 year old interviewee explains that she prefers home birth even in extreme cases:

> "[I prefer] at home. There is no reason to go [to the hospital]. If I die, I die. I don't like that my daughter or daughter-in-law give birth at the hospital. I take care of them and help them to wash everything. I don't want them to get up and touch the cold water."

On the other hand, women who gave birth at the hospital explain that they would recommend institutional childbirth, because they are afraid of complications that may occur while delivering at home. As an interviewee from Asuncion explained, "[I recommend at the hospital] because they take better care of you, and at home some things may happen: the baby can be born and then die."

The interviewees who experienced both home and institutional childbirth provide insightful perspectives that are informed by their experiences in both settings. The interviewees who recommend institutional childbirth focused mainly on the medicines and medical knowledge available at the hospital which are useful in case there are complications, and are particularly important for women that have riskier pregnancies. In contrast, the interviewees who recommend home births explained that, at home, they feel more comfortable (not ashamed of doctors), have more trust in their family members, and it is more convenient (not having to travel to the hospital).

Lastly, it is important to mention that half of the interviewees did not know about the availability of culturally adequate childbirth services at their nearest hospital. Moreover, among those who knew about these services at their nearest public hospital (which were mostly the Shuar women near Méndez who mentioned an informational campaign), half of them mentioned that knowing about these services influenced their decision of choosing to deliver at the hospital. Therefore, promotional campaigns about the availability of intercultural childbirth services at the hospital may be useful to improve the proportion of institutional deliveries.

In conclusion, it appears that women who live near a hospital with intercultural childbirth services are more likely to recommend hospital delivery. Among those who delivered their babies at the hospital, there is a larger proportion that would recommend institutional childbirth when intercultural services are available than when they are not. Still, it is important to mention that the availability of intercultural services does not seem to affect the opinions of the women who chose to deliver at home, and there are still some women with institutional birth experiences who would rather recommend delivering at home. This is an important finding for policy purposes since there might be a need to further improve hospital services, and to promote the availability of intercultural services in order to reach women who have never tried to deliver at a hospital.

Summary of Qualitative Findings

First, the findings indicate that the implementation process of culturally adequate childbirth services in Méndez and Sucúa has been different not only on the timing, but also on how they have been institutionalized. Second, apart from the differences in equipment and infrastructure, the provision of culturally adequate childbirth services depends on the medical personnel's awareness, knowledge, skills, and desire. Thus, cultural competency can be regarded as a complex process which is affected by the interplay of many personal and environmental factors. Third, the findings indicate that, with some differences across sites, some Shuar women feel that there are some elements related to their institutional childbirth experiences that are not appropriate to their traditions regarding childbirth. These factors include: the delay in bathing newborns, the lack of

privacy, language differences, lack of care and trust, and the type of food. Thus, the implementation of culturally adequate childbirth services differs across sites, and may even differ within the same hospital depending on the medical personnel's interactions with patients.

Furthermore, there are two important findings regarding how the availability of culturally adequate services affects the level of satisfaction and the likelihood of choosing or recommending hospital deliveries in the future. The qualitative analysis results indicates that the availability of intercultural services at the nearest hospital appears to have a positive influence on women's satisfaction with childbirth services among those who experienced institutional childbirth. In addition, among those who delivered their babies at the hospital, women are more likely to recommend institutional childbirth when intercultural services are available than when they are not.

Quantitative Analysis

This section presents the findings from the quantitative analysis of administrative data regarding institutional births and maternal mortality rates at the canton and province levels, and of survey data regarding the place of birth of the respondent's last child. This section is divided into two main subsections related to the outcomes of interest: institutional deliveries and maternal mortality rates.

Effects of the Availability of Culturally Adequate Childbirth Services on Institutional Deliveries

This subsection presents the results from the quantitative analysis focused on the effects of the availability of culturally adequate childbirth services on women's decision to deliver at the hospital. The results indicate that, although there is not a significant effect of the availability of intercultural childbirth services on the proportion of institutional deliveries at the canton level, there is evidence that there is a differential effect for indigenous women. The results show that there is a positive effect of the availability of these services for cantons with high proportions of indigenous population, and a higher probability of delivering at the hospital among indigenous women. The results were obtained by using three distinct approaches depending on the data sources and level of analysis: a) a Difference-in-Difference approach using canton and time fixed effects analysis, b)

segmented regression analysis at the canton level, and c) a Linear Probability Model (LPM) to assess the extent to which the availability of culturally adequate services affects the probability of delivering a baby at a hospital.

a) Difference-in-Difference Analysis (canton and time fixed effects)

Using panel data at the canton level for years 2004-2013 (2,160 data points from 216[28] cantons and 10 years), three difference-in-difference models were estimated based on Equation 2 (see Quantitative Analysis section in Chapter 3) to determine whether the availability of culturally adequate services[29] had an effect on the percentage of institutional births at the canton level. Results from the three models (Table 5.4) indicate that there are positive, but not statistically significant effects of the availability of culturally adequate services in the percentage of women who deliver at the hospital in the canton.

The three models provide estimates of canton and time fixed effects regressions with added controls for each model. The canton fixed effects regressions control for time-invariant factors that differ across cantons, which may affect the percentage of institutional deliveries, while the time fixed effects control for factors/events that affect the percentage of institutional deliveries and that change over time, but that are constant across cantons (e.g. changes in national laws or the change in constitution in 2008). Model 3 controls for changes in the number of public medical facilities available within cantons, and for the percent of births that are registered in the civil registry one year later[30]. The results in Model 3 indicate that the only variable with a statistically significant

[28] By 2010, Ecuador had 221 cantons, which belong to the 24 provinces. Since Galapagos was not considered in the analysis, and 2 cantons did not have complete data for the period of analysis, the data used for the analysis only contains information of 216 cantons.

[29] Availability of at least 1 public medical facility with culturally adequate services within the canton in year *t*. From the 216 cantons, 29 had at least 1 culturally adapted public health facility by 2013. Although treatment and comparison cantons did not differ in the proportion of poor people, treatment cantons had a higher proportion of indigenous people (23% vs. 11%, using Census data of 2010). In addition, treatment cantons are larger in population size, on average, mainly due to the fact that Ecuador's 2 larger cities are in the treatment group.

[30] The reason for adding the percent of births that are registered in the civil registry one year later as a variable in Model 3 is to control for a potential source of bias in the way births are reported/registered in

effect on canton institutional delivery rates is the public medical facilities rate (with a 10% statistical significance).

Table 5.4: OLS Difference-in-Difference estimates of the effect of the availability of culturally adequate childbirth services on the % of institutional births at the canton level (2004-2013)

Variable	Model 1	Model 2	Model 3
"Treatment" canton	0.349	0.422	0.43
	(1.153)	(1.148)	(1.150)
Public hospital rate (per 10,000 people)		0.466	0.470+
		(0.286)	(0.285)
% of births registered 1 year later			-0.013
			(0.035)
Constant	58.668**	56.743**	57.206**
	(0.560)	(1.330)	(1.841)
N	2160	2157	2157
Adjusted R-squared	0.924	0.924	0.924

Notes: The three models differ only in the number of independent variables included in each.
Significance levels: + p<0.10 ** p<0.05
"Treatment" canton: cantons in which there is at least 1 medical facility that is adapted to offer culturally adequate (intercultural) childbirth services in year t. All models include canton and time fixed effects. Clustered standard errors in parentheses.
Public hospital rate includes all public medical facilities (includes health centers and sub-centers).

The null effect results[31] should not be surprising since, according to the literature review and the proposed model of how culturally adequate settings might improve health outcomes, the availability of culturally adequate services should not be expected to affect non-indigenous women. Therefore, the Difference-in-Difference results estimated in Table 5.4, which includes a pool of all cantons regardless of the proportion of indigenous population within the canton, was unlikely to have non-zero effects since the policy is expected to have an effect mostly (if not only) on indigenous women.

Therefore, a further analysis was conducted to be able to take into account that effects of the availability of intercultural childbirth services might be more detectable among cantons with high indigenous population, since the policy is particularly intended for indigenous populations[32]. This

the available data. For instance, the intervention has the potential to increase the number of institutional births, which are more likely to be registered in a timely manner.

[31] The sensitivity analysis using the Minimum Adequacy dummy variable as the treatment variable also had null effects.

[32] A heterogeneity analysis was also conducted to take into account that the exposure to "treatment" might vary depending on the number of medical facilities available in the canton in relation to its population size, with no statistically significant findings.

analysis consisted of estimating separate fixed effects regressions for cantons with a proportion of indigenous population below or above the national rate. The results of this analysis show that there are positive significant results for cantons with proportions of indigenous populations higher than the national average (which is 7%).

Table 5.5 Analysis for cantons with different % of indigenous population: Difference-in-Difference estimates of the effect of the availability of culturally adequate childbirth services on the % of institutional births at the canton level (2004-2013)

Variable	% of indigenous population	
	Below national average	**Above national average**
"Treatment" canton	-1.836	2.994**
	(1.747)	(1.406)
Public hospital rate (per 10,000 habitants)	1.162**	0.118
	(0.544)	(0.341)
% of births registered 1 year later	-0.004	-0.014
	(0.047)	(0.050)
Constant	62.567**	40.812**
	(2.659)	(2.942)
N	1488	669
Adjusted R-squared	0.886	0.928

Notes:
Significance levels: + p<0.10 ** p<0.05
"Treatment" canton: cantons in which there is at least 1 medical facility that is adapted to offer culturally adequate (intercultural) childbirth services in year t.
All models include canton and time fixed effects. Clustered standard errors in parentheses.

As Table 5.5 indicates, among cantons with a proportion of indigenous population above the national average, those with intercultural childbirth services have a 3%-points higher percentage of institutional deliveries than cantons without intercultural childbirth services. This finding, which is consistent with the segmented regression analysis of "treatment" cantons, is also in line with the literature review and theory about the importance of culture in determining the choice of the place of delivery. In addition, the results of this heterogeneity analysis partly explain why the Difference-in-Difference model with the whole set of cantons did not find statistically significant results: the effect of having a public medical facility with intercultural childbirth services has a more identifiable effect in places where the indigenous population is more predominant since the policy is aimed at providing more culturally appropriate services for indigenous populations.

Nevertheless, it is important to mention that this difference-in-difference model has one major limitation due to the fact that it does not control for factors that change differently in time across cantons.

In conclusion, if we consider that cantons with indigenous populations above the national average are "true" treatment and comparison groups for a policy geared towards indigenous populations, we can conclude that the availability of culturally adequate childbirth services has a positive and statistically significant effect on the percentage of institutional deliveries at the canton level.

b) Segmented Regression Analysis

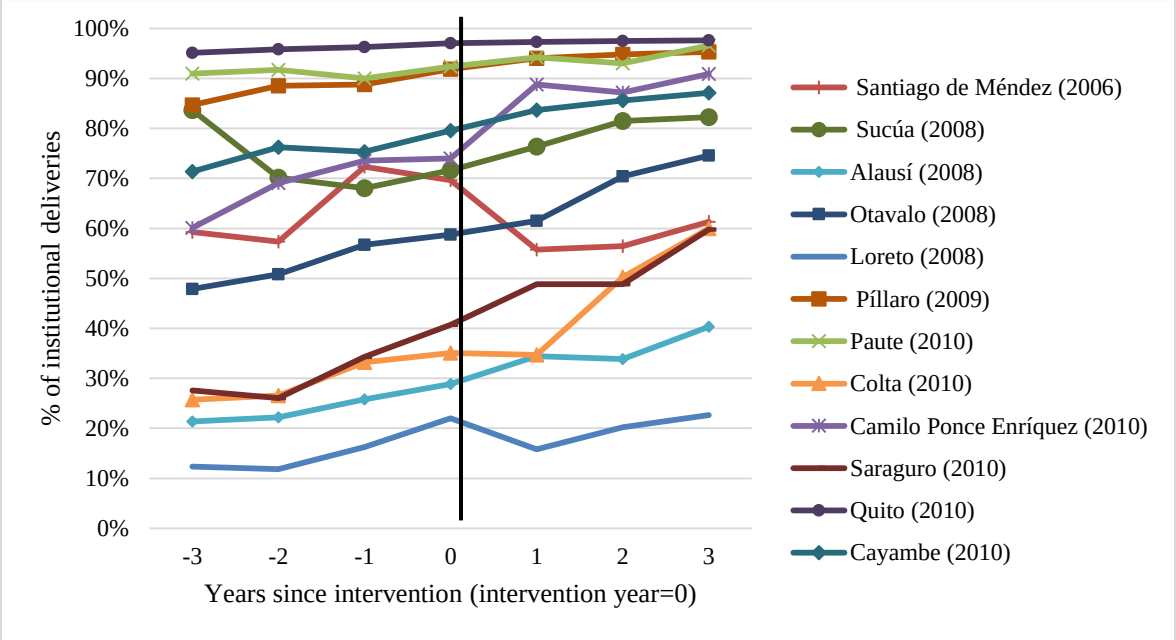
Since the adaptation of delivery rooms is not uniform across sites, and since the response to how the delivery rooms have been adapted may vary for different indigenous nationalities, a disaggregated analysis by canton was conducted. Specifically, a Segmented Regression Analysis approach was conducted to analyze whether there were any level and/or trend changes in the percentage of institutional deliveries in cantons with at least one public medical facility providing culturally adequate childbirth services. Since this type of time-series regression analysis approach can be particularly sensitive to small sample sizes, the analysis was narrowed only to cantons with available information on 3 years prior and 3 years after the implementation of culturally adequate birthing rooms. Therefore, only 12 out of the 46 cantons[33] with at least one public hospital with intercultural services were used for this part of the analysis.

A graphic visualization of the trends of the proportion of institutional deliveries in the 12 cantons before and after the implementation of intercultural childbirth services provides some initial insights about how the availability of intercultural childbirth services might have affected the

[33] By 2013, 29 cantons had at least 1 public medical facility with intercultural childbirth services (46 cantons by 2015). From the 29 cantons, only 12 had data from 3 year prior and 3 years after the implementation of intercultural childbirth services with the 2003-2013 data set: Paute (Azuay), Camilo Ponce Enríquez (Azuay), Alausí (Chimborazo), Colta (Chimborazo), Otavalo (Imbabura), Saraguro (Loja), Santiago de Méndez (Morona Santiago), Sucúa (Morona Santiago), Quito (Pichincha), Cayambe (Pichincha), Píllaro (Tungurahua), and Loreto (Orellana).

proportion of institutional deliveries in the cantons where they were implemented. Figure 5.2 indicates that the level and trend changes in the percentage of institutional deliveries, in most cases, appear to be positive after the implementation of the cultural adaptation of birthing rooms in each canton. The only two cases where the slope appears to diminish are Santiago de Méndez (in Morona Santiago) and Loreto (in Orellana). Nevertheless, these are only preliminary insights which are very limited due to the small number of data points.

Figure 5.2: % of institutional deliveries in cantons with +/-3 years of data from the implementation of culturally adequate birthing rooms in at least one public hospital (2003-2013)



Source: Data from INEC, years 2004-2013. Year of implementation of culturally adequate childbirth services in each canton are in parentheses. Implementation of the intervention is marked in the graph as time "zero".

Appendix C shows the coefficient estimates of the segmented regression analysis (using the Prais-Winsten method to correct for autocorrelation) for each of the 12 cantons in the 2003-2013 period. The differences among cantons can probably be explained by the fact that the degree and kind of adaptation of culturally adequate birthing rooms and the way intercultural childbirth services are provided vary across sites.

There are some common characteristics among the cantons with statistically significant changes. Table 5.6 shows that, except for Quito, cantons with positive changes in trends and/or slope are

those with high proportions of indigenous population, high poverty rates, and low educational attainment. On the other hand, cantons with lower proportion of indigenous populations, such as Pillaro and Quito, are the ones that reflect negative changes in slope. This finding reinforces and complements the conclusions from chapter 4 regarding the importance of culture in determining the place for childbirth. Thus, although the implementation of culturally adequate childbirth services already tends to take place in cantons with high proportions of indigenous populations, the effect of the availability of those services seems to be more pronounced in places with higher numbers of indigenous people.

Even though the segmented regression analysis results are useful to understand changes in trends after the implementation of a policy, it is important to mention this approach has considerable limitations in its ability to infer causality. This is because, although this type of analysis allows to determine if there was a systematic shift in the outcome variable at and after a given time point, it does not identify the causal determinants of that shift (Lagarde, 2012). For instance, there could have been other national or local policies that occurred at the same time which could have affected the percentage of institutional deliveries. Therefore, this approach serves as a more detailed descriptive analysis of changes in trends in specific cantons, and as a robustness check to the difference-in difference analysis conducted at the canton level which is described in subsection a), above.

c) Probability of Delivering at a Hospital

Using individual level data from the Survey of Living Conditions (ECV) 2013-2014, a Linear Probability Model analysis was conducted to assess the extent to which the availability of culturally adequate services affects the probability of delivering a baby at a hospital. The results indicate that, after controlling for sociodemographic characteristics and time-invariant canton-level characteristics, the availability of intercultural childbirth services has a positive differential effect on the probability of delivering at a hospital for indigenous women.

Table 5.6: Sociodemographic characteristics of cantons with +/-3 years of data from the implementation of culturally adequate birthing rooms in at least one public hospital (2010)

Canton	Province	Year impl.	Change in level	Change in slope	Region	% indigenous	% poor	% ≥ high school education	Average # of children
Santiago de Méndez	Morona Santiago	2006	0	0	A	37%	72%	38%	2.5
Sucúa	Morona Santiago	2008	0	0	A	35%	63%	35%	2.3
Alausí	Chimborazo	2008	0	+	H	59%	87%	25%	2.4
Otavalo	Imbabura	2008	0	0	H	57%	67%	33%	2.0
Loreto	Orellana	2008	0	0	A	67%	94%	33%	3.0
Píllaro	Tungurahua	2009	0	-	H	5%	71%	31%	1.6
Paute	Azuay	2010	0	0	H	1%	70%	29%	1.8
Camilo Ponce Enríquez	Azuay	2010	0	0	H	1%	76%	30%	2.2
Colta	Chimborazo	2010	-	+	H	87%	93%	24%	2.0
Saraguro	Loja	2010	+	+	H	35%	87%	26%	2.2
Quito	Pichincha	2010	+	-	H	4%	30%	54%	1.5
Cayambe	Pichincha	2010	0	0	H	34%	67%	36%	2.0

Source: Census 2010
Notes: Poverty status according to unmet basic needs. Regions: A=Amazon, H=Highlands
High school or above includes people who completed 10th, 11th, 12th grade, or more than high school.

Table 5.7 shows the results of a Linear Probability Model on the probability of delivering a baby at a hospital. The results shown in Model 1 indicate that, holding ethnicity constant, women who live in cantons where culturally adequate birthing services were available when they delivered their last baby are 5.5% more likely to deliver at a hospital than those who gave birth when/where those services were not available. Yet, as Model 2 shows, after controlling for sociodemographic characteristics[34], the coefficient is no longer statistically significant. This finding calls for a more in depth analysis that examines whether the availability of intercultural childbirth services only shows an effect on indigenous women, since more than 9 out of 10 mestizo women are already delivering their babies at the hospital.

[34] Controlling for the sociodemographic characteristics that were statistically significant in the analysis of the determinants of institutional delivery in Chapter 4.

Table 5.7: Linear Probability Model Results on the Probability of Institutional Delivery

	Model 1	Model 2	Model 3
"Treatment"	0.055**	0.012	-0.00029
	(0.023)	(0.011)	(0.009)
Indigenous	-0.432**	-0.252**	-0.267**
	(0.035)	(0.023)	(0.023)
Afro-Ecuadorian	-0.02	0.004	0.004
	(0.024)	(0.016)	(0.016)
Other ethnicity	0.027**	0.013*	0.013+
	(0.008)	(0.008)	(0.008)
Treatment x Indigenous (interaction)			0.095+
			(0.053)
Sociodemographic controls		Yes	Yes
Canton Fixed Effects		Yes	Yes
N	10,610	10,610	10,610
Adjusted R-squared	0.227	0.228	0.322

Notes:
Significance levels: + p<0.10 ** p<0.05. Source: ECV 2013-2014
Clustered standard errors in parentheses. Galapagos in not included in the analysis.
"Treatment" =1 if at least one hospital with intercultural services was available in canton of residence when woman delivered last baby.
Sociodemographic controls: Educational attainment, age, # of children, poverty status, age when woman had her first child, year last childbirth, rural area, knows about Free Maternity Law, ever had an OBGYN checkup, geographical area.

Considering that indigenous women are expected to be differentially impacted by the implementation of culturally adequate childbirth services than non-indigenous women, an interaction term of "Treatment" and "indigenous" indicator variables was included in Model 3. This interaction coefficient helps to differentiate whether the availability of culturally adequate birthing rooms had a different effect in the likelihood of choosing to deliver at a hospital for indigenous women compared to non-indigenous women. The findings shown in Model 3 in Table 5.7 indicate the following:

- Mestizo women who gave birth when/where intercultural birthing services were available in their canton of residence are as likely to give birth at the hospital as mestizo women who gave birth when/where intercultural birthing services were not available.
- Indigenous women who gave birth when/where intercultural birthing services were not available have a 27% lower probability of giving birth at the hospital than mestizo women who gave birth when/where intercultural birthing services were not available. This finding

indicates that there are significant disparities in access to institutional care during childbirth by ethnicity, even in places where intercultural childbirth services are not available.

- The difference in the effect of intercultural childbirth services on the probability of delivering at a hospital between mestizo and indigenous women is 9.5% (which is significant at the 10% level).

In conclusion, although the availability of intercultural childbirth services does not seem to have statistically significant results at the canton level nor at the individual level for the population in general, the results indicate that there is a positive differential effect for indigenous women in the probability of delivering at a hospital.

Effects on Maternal Mortality Rates

This subsection presents the results from the quantitative analysis focused on the effects of the availability of culturally adequate childbirth services on Maternal Mortality Rates (MMR) at the province level. The results, indicate that there is no apparent statistically significant effect of the availability of intercultural childbirth services on MMRs at the province level. Yet, this finding might be partially explained by the few available data points after the implementation of the policy, the unit of analysis, and the distinctive characteristics of MMR at the province level. First, not enough time has passed since the implementation of intercultural childbirth services which might make it more difficult to reflect significant changes in maternal deaths. Second, the lowest level of geographic disaggregation for MMR, which is used for this part of the analysis, is the province level (due to the low absolute number of maternal deaths). So, it might be difficult to find effects of the availability of culturally adequate services in one or two of hospitals within a province since the province might be comprised of several cantons with and without intercultural childbirth services (this is a problem of exposure to "treatment" or dosage). Lastly, province MMR are very sensitive to changes in the number of the maternal deaths that are registered in each province. So, other factors that may affect the number of deaths (such as how the deaths are categorized or

classified as maternal deaths or other kinds of deaths) which are not related to the implementation of intercultural childbirth services can produce great variability in MMRs, which can confound the analysis.

The results for the MMR analysis were obtained by using two distinct approaches depending on the data sources and level of analysis: a) segmented regression analysis at the province level, b) province and time fixed effects analysis.

a) Segmented Regression Analysis

Similar to the analysis of the proportion of institutional deliveries at the canton level, a Segmented Regression Analysis approach was conducted to analyze whether there were any level and/or trend changes in Maternal Mortality Rates in provinces with at least one public hospital with a culturally adapted birthing rooms. Since this type of time-series regression analysis approach can be particularly sensitive to small sample size, the analysis was narrowed only to provinces with available information on at least 3 years prior and after the implementation of culturally adequate birthing rooms. Therefore, only 12 out of the 24 provinces[35] with at least one public hospital with intercultural services were used for this part of the analysis.

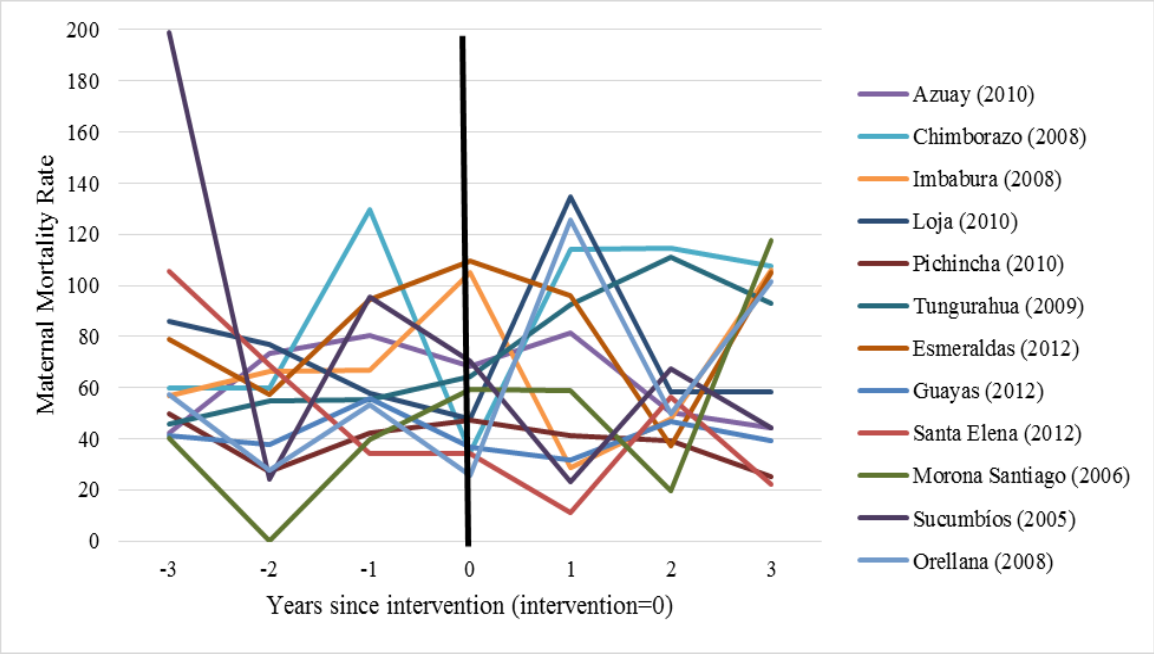
A graphic visualization of the MMR trends in the 12 provinces before and after the implementation of intercultural childbirth services provides some insights about how the availability of these services might have affected MMR in the provinces where they were implemented. Figure 5.3 indicates that there is considerable variation in MMR across provinces and time, with no clear pattern regarding the implementation of culturally adequate birthing rooms. While fewer than half of the 12 provinces show either a sharp or moderate increase in MMR after the intervention, the other provinces show either a decrease or no immediate perceptible change.

The segmented regression analysis results indicate that most provinces did not experience level or

[35] By 2014, 16 provinces had at least 1 public medical facility with intercultural childbirth services (17 provinces by 2015). From the 16 provinces, only 9 had data from 3 year prior and 3 years after the implementation of intercultural childbirth services: Azuay, Chimborazo, Esmeraldas, Guayas, Imbabura, Loja, Morona Santiago, Pichincha, Tungurahua, Santa Elena, Sucumbios, and Orellana.

trend changes in their MMR after the implementation of the cultural adaptation of at least one public hospital's birthing room. An unexpected finding is that the MMR in three provinces seems to have experienced an immediate positive change, but with no change in trend afterwards. Nevertheless, the results of this analysis provide only preliminary insights which are very limited due to the small number of data points and to the unit of analysis.

Figure 5.3: MMR of provinces with +/-3 years of data from the implementation of culturally adequate birthing rooms in at least one public hospital during the 2000-2015 period



Source: MMR data provided by INEC, years 2000-2015. The year of implementation of culturally adequate childbirth services in each provinces is in parentheses.

Table 5.8 shows that there are no clear common patterns regarding province sociodemographic characteristics with statistically significant changes in MMR[36]. Moreover, the three provinces with an immediate increase in MMR after the policy are not similar in terms of poverty levels, % of indigenous population, average number of children, nor population density. The only commonality is that the three provinces with statistically significant results seem to be late adapters of intercultural childbirth services (implemented the policy in years 2009, 2010, and 2012). Therefore,

[36] Appendix D shows the coefficient estimates of the segmented regression analysis (using the Prais-Winsten method to correct for autocorrelation) for each province.

more time might be needed to perceive the potential effects of the policy on MMR.

As mentioned above, it is important to point out that segmented regression analysis can only provide insights to understand changes in trends associated with the implementation of a policy, but it has considerable limitations in its ability to infer causality. This is because, while segmented regression analysis can distinguish systematic shifts in the outcome variable at and after a given time point, it does not determine the causal determinants of that shift (Lagarde, 2012). For instance, there could have been other national or province-level policies that occurred at the same time which could have affected the number of maternal deaths. Therefore, in order to provide more robust results, a difference-in difference analysis at the province level was also conducted.

Table 5.8: Sociodemographic characteristics of provinces with +/-3 years of data from the implementation of culturally adequate birthing rooms in at least one public hospital (2010)

Province	Year of implem.	Change in level	Change in slope	Region	% indigenous	% poor	Average # of children	Population Density
Azuay	2010	0	0	H	2%	48%	2.4	88.6
Chimborazo	2008	0	0	H	38%	67%	2.7	70.5
Imbabura	2008	0	0	H	26%	54%	2.6	86.8
Loja	2010	+	0	H	4%	62%	2.9	40.5
Pichincha	2010	0	0	H	5%	33%	2.1	270.1
Tungurahua	2009	+	0	H	12%	57%	2.4	149.0
Esmeraldas	2012	+	0	C	3%	78%	3.2	33.1
Guayas	2012	0	0	C	1%	58%	2.4	232.0
Santa Elena	2012	0	0	C	1%	72%	2.8	83.6
Morona Santiago	2006	0	0	A	48%	76%	3.4	6.1
Sucumbíos	2005	0	0	A	13%	87%	3.0	9.7
Orellana	2008	0	0	A	32%	85%	3.1	6.2

Notes: Data from Census 2010, INEC.
Poverty status according to unmet basic needs. Population density in people/km^2
Regions: A=Amazon, H=Highlands, C= Coast

b) <u>Difference-in-Difference (Province and Time Fixed Effects)</u>

Using panel data at the province level for years 2002-2014 (299 data points from 23[37] provinces and 13 years), three difference-in-difference models were estimated based on Equation 5 (see

[37] By 2010, Ecuador had 24 provinces. Since Galapagos was not considered in the analysis, the data used for the analysis only contains information of 23 provinces.

Quantitative Analysis section in Chapter 3) to determine whether the availability of culturally adequate services[38] had an effect on MMR at the province level. The three models provide estimates of province and time fixed effects regressions with added controls for each model. The province fixed effects regressions control for time-invariant factors that differ across provinces and may affect MRR. The time fixed effects control for factors/events that affect the MMR and that change over time, but that are constant across provinces (e.g. changes in national laws or the change in constitution in 2008).

Results from the three models (Table 5.9) indicate that, all else constant, there are negative, but not statistically significant effects of the availability of culturally adequate services on Maternal Mortality Rates at the province level. The most complete model (Model 3) controls for the percentage of institutional births and for the number of public and private medical facilities in the province. A sensitivity analysis was also using the Minimum Adequacy dummy variable as "treatment", with similar and not statistically significant findings.

Table 5.9: Effects of availability on culturally adequate services on Maternal Mortality Rates at the province level (years 2002-2014)

Variable	Model 1	Model 2	Model 3
"Treatment" province	-9.124	-8.801	-8.324
	(6.555)	(6.380)	(6.201)
% institutional births		-62.382	-56.855
		(46.442)	(46.688)
# of public medical facilities			0.266+
			(0.148)
# of private medical facilities			-0.024
			(0.171)
Constant	61.210**	98.571**	61.513
	(9.807)	(27.125)	(37.271)
N	299	299	299
Adjusted R-squared	0.247	0.249	0.248

Notes:
Significance levels: + p<0.10 ** p<0.05
"Treatment" province: provinces in which there is at least 1 medical facility that is adapted to offer culturally adequate (intercultural) childbirth services in year t
All models include province and time fixed effects
Clustered standard errors in parentheses
Galapagos in not included in the analysis

[38] Availability of at least 1 public medical facility with culturally adequate services within the province *p* in year *t*.

The null effect results should not be surprising since, according to the literature review and the proposed model of how culturally adequate settings might improve health outcomes, the availability of culturally adequate services should not be expected to affect non-indigenous women. Therefore, the Difference-in-Difference analysis shown in Table 5.9, which includes a pool of all provinces regardless of the proportion of their indigenous population, was unlikely to have non-zero effects since the policy is expected to have an effect mostly (if not only) on indigenous women. A heterogeneity analysis was conducted to be able to take into account that effects of the availability of intercultural childbirth services might be more detectable among provinces with high indigenous populations, since the policy is particularly intended for indigenous populations. The analysis, which consisted of estimating separate fixed effects regressions for provinces with proportions of indigenous population below or above the national rate, show that there are no statistically significant results for provinces with varying proportions of indigenous populations.

Table 5.10: Heterogeneity analysis for provinces with different % of indigenous population: Effect of the availability of culturally adequate childbirth services on province-level MMR (2002-2014)

	% of indigenous population	
Variable	**Below national average**	**Above national average**
"Treatment" province	-7.015	-8.278
	(10.620)	(8.364)
% institutional births	-0.49	-0.907
	(0.533)	(0.846)
# of public medical facilities	0.412	0.162
	(0.236)	(0.228)
# of private medical facilities	0.014	0.18
	(0.157)	(1.228)
Constant	0.372	109.141**
	(59.168)	(42.983)
N	143	156
R-squared	0.261	0.103

Notes:
Significance levels: + p<0.10 ** p<0.05
"Treatment" province: provinces in which there is at least 1 medical facility that is adapted to offer culturally adequate (intercultural) childbirth services in year t.
All models include province and time fixed effects. Clustered standard errors in parentheses.

In conclusion, in contrast to the positive effects of the availability of culturally adapted birthing

rooms in the proportion of institutional deliveries, the results did not find any statistically significant results on MMR. Even after dividing the provinces by the proportion of indigenous population, there were no statistically significant results on MMR. This could potentially be due to the unit of analysis; the province level might be too large to be able to capture any potential changes due to local adaptation of childbirth services, and does not allow to distinguish the variation among localities (cantons) within provinces.

Quantitative Analysis Main Conclusions

In conclusion, this dissertation finds that the availability of culturally adequate childbirth service has a positive effect on institutional deliveries among indigenous women. When considering cantons with indigenous populations above the national average, we can conclude that the availability of culturally adequate childbirth services has a positive and statistically significant effect (of 3 percentage points) on the percentage of institutional deliveries at the canton level. In addition, the results of the analysis at the individual level indicate that there is a positive differential effect (9.5%) for indigenous women in the probability of delivering at a hospital. This finding is in line with Brach and Fraserirector's (2000) framework, in which they explain that there are strong reasons to believe that appropriate implementation of sound cultural competency techniques in delivering health services has the potential to reduce health outcome disparities. On the other hand, there does not seem to be evidence to support the tenet that the availability of culturally adequate childbirth service has any effect on Maternal Mortality Rates at the province level. Yet, this null finding might be explained in part by the few data point available and the aggregate unit of analysis, which may not reflect more localized effects of the availability of culturally adequate childbirth services.

Convergent mixed Methods Analysis and Main Conclusions

Although the quantitative and qualitative analyses are not based on data from the same individuals nor the same time frame, their results can be compared and integrated in order to better explain the extent to which the availability of culturally adequate childbirth services affects the proportion of

institutional deliveries, perceptions of health care, and maternal mortality. The smaller scale qualitative analysis pertaining to Shuar women and medical personnel in three cities of the Morona Santiago province is particularly useful since it helps to show that there are differences in the implementation of culturally adequate services that may make a difference when indigenous women decide where to deliver. In addition, qualitative results are used to complement and triangulate the quantitative findings.

The quantitative and qualitative findings of this dissertation are in line with the proposed integrated model of how culturally adequate childbirth settings might increase access to institutional deliveries and improve the level of satisfaction with health care among indigenous women (Figure 2.6 in Chapter 2). The quantitative results indicate that, although there were no apparent effects of the availability of intercultural childbirth services in the population in general, there is a positive differential effect for indigenous women on the probability of them delivering at a hospital. The qualitative findings from the interviews with Shuar women corroborate the quantitative findings about the increased probability of delivering at the hospital when culturally adequate services are available. In addition, they complement these results by indicating that there is also an effect on levels of satisfaction with health care.

On the other hand, the quantitative results indicate that there is no evidence that links culturally adequate childbirth services with reduced maternal mortality rates. Yet, these null findings may be due to the unit of analysis, which does not allow to assess more local effects. Considering these shortcomings within the available quantitative data, the qualitative findings provide important insights. For instance, the qualitative results might explain why there are null findings at the province level, since positive effects from the provision of culturally adequate childbirth services depend on the available equipment and infrastructure at the nearest hospital, and also depend significantly on the medical personnel's awareness, knowledge, skills, and desire to provide these type of services. Since these factors differ greatly across cantons within the same provinces, the quantitative analysis at the province level could not take into account these local implementation

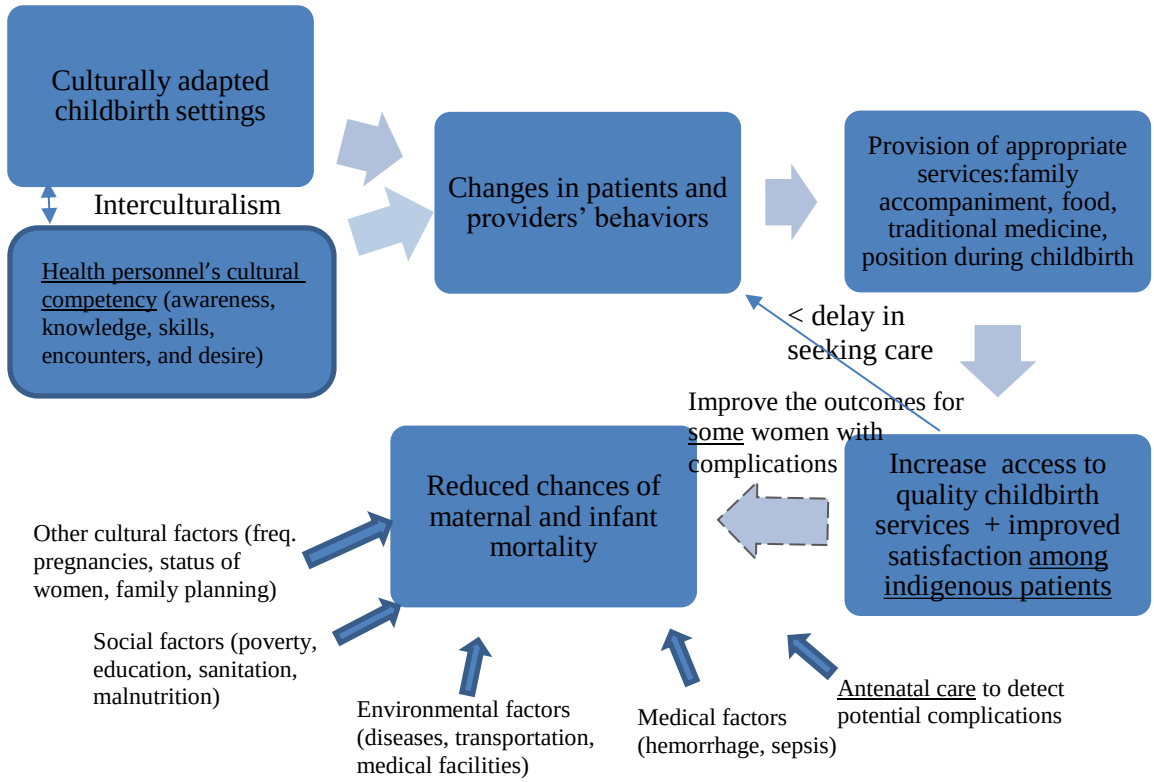
differences.

In contrast with the quantitative null findings on maternal mortality rates, the qualitative results indicate that both medical personnel and Shuar women interviewees believe institutional deliveries may be able to prevent maternal deaths since "women die at home, at the hospital they don't." Moreover, qualitative findings also broaden and complement the results since they suggest that there are other mechanisms, apart from institutional deliveries, through which maternal deaths could be prevented. Specifically, qualitative findings indicated that lack of antenatal care and poor knowledge of alert signs during pregnancy are some of the causes of maternal deaths. Thus, the proposed model of the effects of culturally adequate health facilities on maternal and child health outcomes described was revised to reflect these mixed methods findings, as shown in Figure 5.4.

Figure 5.4 presents the revised model of the effects of culturally adequate health facilities on maternal and child health outcomes, which is based on the mixed methods results. This model reflects the changes made to the proposed model (which was based on the concepts and frameworks by Brach and Fraserirector (2000); Anderson et al. (2003); Fernandez Juarez (2010); Stokoe (1991); McCarthy & Maine (1992); Thaddeus & Maine (1994); and Evans (2013)) based on the quantitative and qualitative findings. The model still indicates that there is a positive relationship between the provision of culturally adequate childbirth services and the likelihood that indigenous women deliver at the hospital. This revised model incorporates the medical personnel's cultural competency (and its implied dimensions), and takes into account the fact that the availability of culturally adequate childbirth services may have effects that are specific to indigenous patients. In addition, the dotted arrow indicates that there might be a relationship between increased access to institutional deliveries and reduced infant and maternal deaths, but that this relationship does not have empirical evidence in this analysis, at least at the province level. Lastly, the revised model includes antenatal care as one of the other factors that may reduce maternal and infant deaths. This is an important finding, since another potential way of reducing maternal deaths may be through

the provision of culturally adequate antenatal care services.

Figure 5.4: Revised model of the effects of culturally adequate health facilities on maternal and child health outcomes



Chapter 6: Main Conclusions and Discussion

Introduction

The previous five chapters set forth essential background information for this dissertation, reviewed relevant theoretical frameworks to understand the potential links between the provision of culturally competent services and improved health outcomes, explained the methodology employed in this research, and provided the findings from the qualitative and quantitative analyses. This chapter presents the main conclusions regarding the extent to which culturally adequate child delivery practices affect access to healthcare and health outcomes in Ecuador. The chapter is divided into three main sections. First, it presents a brief overview of the main conclusions. Second, it describes the implications of the research findings on three different dimensions: practice, theory, and cultural competence in evaluation. Lastly, this chapter presents ideas for further research inspired by this study.

Summary of Main Conclusions

Using a mixed methods approach, this dissertation examined the extent to which the availability of culturally adequate delivery services affects access to healthcare and health outcomes in Ecuador. This research objective was motivated by the issues regarding high maternal mortality rate, and the gaps in the proportions of institutional delivery between indigenous and non-indigenous women in Ecuador. This section provides a brief summary of the key findings.

Culture and traditions are among the main factors that determine the choice of institutional delivery in Ecuador. The mixed methods results indicate that ethnicity is an important factor that determines whether Ecuadorian women choose to give birth at a hospital instead of at home. The quantitative analysis results indicate that indigenous women are less likely to deliver their babies at a health facility than mestizo women, even after controlling for other factors. Specifically, even after controlling for other determinants, an indigenous woman has a 26.4% lower probability than

a mestizo woman to give birth at a hospital. In addition, the qualitative findings indicate that Shuar women's perceptions about health care, along with their preferences towards certain traditional practices (i.e. vertical childbirth position, family accompaniment, traditional medicine), are important factors that determine whether women choose to give birth at a hospital instead of at home. Other important factors that are negatively associated with the probability of institutional deliveries, which are in line with Moyer and Mustafa's (2013) systematic review's findings, are: higher parity, lower socio-economic status, and rurality. On the other hand, age, educational attainment, OBGYN checkups, and knowledge of the Free Maternity Law are positively correlated with institutional deliveries.

The availability of culturally adequate childbirth services improves the proportion of institutional deliveries and perceptions of health care among indigenous women in Ecuador. The quantitative results indicate that there is a positive differential effect of the availability of culturally adequate childbirth services on the probability of delivering at a hospital for indigenous women. There is also a positive effect in the proportion of institutional deliveries in cantons with high indigenous populations. Specifically, among cantons with a proportion of indigenous population above the national average, those with intercultural childbirth services have a 3 percentage-points higher proportion of institutional deliveries than cantons without intercultural childbirth services. The interviews with Shuar women corroborated these findings, and also indicated that Shuar women who delivered their babies at hospitals with culturally adequate services reported higher levels of satisfaction with health care, and are more likely to recommend institutional deliveries in the future.

There is still inconclusive evidence about the effects of the availability of culturally adequate childbirth services on Maternal Mortality Rates. Although the quantitative analysis indicated that there are no significant relationships between the availability of culturally adequate facilities and maternal mortality rates at the province level, this might be, in part, due to the inability to

differentiate local changes in the aggregate province level, and due to the few years that have passed since the implementation of the policy. Conversely, the qualitative results indicate that both medical personnel and Shuar women interviewees believe institutional deliveries may be able to prevent maternal deaths, and also suggest other mechanisms, apart from institutional deliveries, through which maternal deaths could be prevented, including antenatal care and knowledge of signs of potential alert during pregnancy.

Implications of Findings

This section presents important insights about the implications of the dissertation findings on practice, theory, and on culturally competent evaluation.

Implications for Practice

There is evidence to support the rationale behind the provision of culturally adequate childbirth services.

The findings regarding the fact that culture/ethnicity plays an important role in determining the choice of institutional deliveries in Ecuador provides evidence to support the implementation of culturally adequate childbirth services such as the care services described in MSP's 2008 guidebook with Technical Guidelines for Culturally Adequate Childbirth Services. This is because the findings suggest that if the underlying reasons why indigenous women choose home deliveries were to be taken into consideration by medical institutions in a culturally competent way, there could be a potential increase in institutional deliveries. Thus, these findings have important implications for health care practice because they indicate that a potential mechanism to increase institutional births among indigenous populations, is to adapt the way childbirth services are provided to accommodate the patient's culture and traditions.

The provision of culturally adequate services has the potential of reducing the gaps in institutional childbirth across different ethnic groups.

The finding that the availability of culturally adequate services is positively correlated with higher institutional delivery rates in cantons with higher proportions of indigenous populations indicate

that these services can be implemented as a tool for reducing disparities by ethnicities. Therefore, although culturally adequate services should ideally be provided in all facilities across the country, MSP could consider targeting cantons with the highest proportions of indigenous populations, in order to maximize potential benefits and further reduce disparities in institutional deliveries. In addition, depending on the costs and effectiveness of alternative policies, the provision of culturally adequate services might prove to be a cost-effective alternative. Further research will be needed to assess the cost-effectiveness of this policy compared to other ones with the same goal.

The cultural adaptation of infrastructure and equipment might not be enough to guarantee the provision of culturally adequate services. Implementation is important: medical training and increased cultural awareness are needed.

The interviews with health personnel at three hospitals of the Morona Santiago province indicated that there were differences among hospitals with adapted equipment for intercultural childbirth services. While at the Sucúa hospital medical personnel explained that they ask women about the position they prefer for childbirth, the doctor in Méndez explained that alternative positions were only offered upon request. In addition, the interviews revealed that most of the knowledge about patients' culture, traditions and alternative birthing positions is not gained through formal medical training, but through frequent cross-cultural medical encounters. Anderson et al.'s (2003) framework indicates other types of interventions, apart from culturally specific healthcare settings, that can improve the provision of culturally competent services, such as recruiting/retaining diverse staff, use of interpreters or bilingual providers, training for healthcare providers, and use of linguistically and culturally appropriate health education materials. Moreover, since cultural awareness and cultural desire play key roles in how medical personnel *want* rather than *are required* to provide culturally adequate services, MSP and hospital administration should consider and design activities in which medical personnel can gain more cultural awareness and be motivated to be proactive in making cultural accommodations (cultural desire). In addition, there needs to be a paradigm shift, as Salaverry (2010) indicates, in how doctors and nurses are trained in order to

expose them to interculturalism and anthropology in medical schools. Lastly, it is important to mention that although national guidelines are useful, the implementation of services needs to be tailored to the local contexts and cultures; both design and implementation of services have to consider the local patients' needs.

There are some cultural traditions or preferences that should be taken into account when designing policies regarding culturally adequate childbirth services.

The qualitative findings indicate that there are certain Shuar traditions, such as a strong preference for family accompaniment, vertical childbirth position, and the use of certain traditional medicines, that can influence the decision of Shuar women to deliver their babies at home. In addition, due to their culture, some women are ashamed to be seen and touched by a doctor, and thus, opt to deliver in the privacy and comfort of their homes. Other major negative perceptions about medical care include routine vaginal examinations, lack of privacy, and episiotomies. Although these findings are specific to Shuar women, the implications are likely transferrable to other ethnicities within Ecuador, and within other countries, if we consider these cultural factors as mechanisms and not only as particular preferences of a specific ethnic group. Therefore, the implication of the findings for practice in other settings (and with other ethnic groups) means that programs geared towards the provision of culturally adequate childbirth services should at least take into consideration the population's traditions regarding food, traditional medicines, accompaniment and privacy, rituals, and position for delivery. In the specific case of Ecuador, this is reflected mostly in MSP's 2008 Technical Guidelines for Culturally Adequate Childbirth Services, but is not necessarily known or applied by medical personnel nationwide.

In addition to cultural factors, there are important determinants to increase institutional deliveries which can be of interest for the design of alternative or complementary policies.

In line with the findings of Moyer and Mustafa's (2013) systematic review's, the quantitative analysis results indicate that higher parity, lower socio-economic status, and rurality are deterrents of institutional delivery, while educational attainment and OBGYN checkups act as drivers of

institutional delivery. The results further indicate that mother's age and knowledge of the Free Maternity Law are positively correlated with institutional deliveries.

Therefore, policymakers and health administrators who are looking for other ways to increase institutional deliveries could not only look into integrated programs that tackle some of the structural deterrents of institutional deliveries, such as poverty, educational attainment, and teenage pregnancy, but should also consider targeted efforts that tackle some of the other determinants. For instance, policymakers can aim to increase the proportion of institutional deliveries through initiatives that focus on improving the access to antenatal care, informing the people about their right to free maternity services, and improving access to family planning services and resources, among others.

Promotion of the availability of culturally adequate services, efforts to improve the perceptions of medical care, and efforts to increase antenatal care, are key to increasing the proportion of institutional deliveries,

Fear and negative perceptions of medical care, which are often based on past negative experiences with medical encounters, can affect future decisions, and women may spread these negative perceptions throughout the wider community. Moreover, most interviewees did not have knowledge about the existence of culturally adequate childbirth services at their nearest hospital. Therefore, it is important to let the population know about the availability of culturally adequate services in order to potentially alleviate some of the fears that are associated with delays in seeking care, and change negative perceptions about medical care. In addition, the communication and promotion of the available services should be a key factor to reach women with little or no previous experience with medical care, so they can be informed about their options.

Implications for Theory

The operationalization of cultural competency in health care settings needs to reflect the different dimensions of the construct.

As the findings indicate, there are differences in the way childbirth services are provided across hospitals, cities, and provinces. The findings suggest that the provision of culturally adequate childbirth services not only depends on the availability of adequate equipment and infrastructure,

but also on personal and institutional factors. This is an important finding, because the way MSP's Intercultural Health Division monitors the provision of culturally adequate services is according to the availability of equipment and infrastructure (which is also how this dissertation operationalized the treatment variable in the quantitative analysis). Therefore, research on culturally adequate health care services should keep in mind that the equipment and infrastructure are the minimum tools that medical personnel need in order to provide culturally adequate services, but that the appropriate use of those tools will depend on their cultural awareness, desire, skills, knowledge, and encounters. For this reason, Campinha-Bacote's (2002) *Process of Cultural Competence in the Delivery of Healthcare Services* can be a useful framework to analyze the different aspects of medical personnel's cultural competency. MSP should also aim to include these dimensions of medical personnel's cultural competency in their monitoring and evaluation efforts in order to better reflect the provision of culturally competent services.

There are linkages between the provision of culturally adequate childbirth services, institutional deliveries, and maternal mortality.

This dissertation's findings provide evidence that supports the literature and theoretical frameworks about the role of that culture/ethnicity plays in determining the choice of institutional deliveries. Moreover, this dissertation proposed and examined an integrated model which incorporates the concepts and frameworks of: Brach & Fraserirector (2000), Anderson et al. (2003); Fernandez Juarez et al. (2010); Stokoe (1991); McCarthy & Maine (1992); Thaddeus & Maine (1994); and Evans (2013). This integrated model explains how culturally adequate services may reduce delays in seeking care, consequently increasing the proportion of institutional deliveries, and, as a result, have potentially beneficial effects in reducing maternal mortality for cases with complications. This proposed model was tested, and revisions were made to the theoretical model which are backed by the evidence here.

First, the mixed-methods findings from chapter 4 are in line with Stokoe's (1991) model of maternal mortality determinants, which predicts that cultural factors are associated with home deliveries,

which are associated with poor maternal health that can lead to maternal mortality. Yet, Stokoe's model lacks a description of how, why and which cultural factors affect the decisions of where to deliver babies. Thus, an important contribution of this dissertation is that it provides a more in depth understanding of the cultural factors that explain why some indigenous women prefer home births. Moreover, the findings indicate that there is a link between cultural factors and the choice of where women want to deliver their babies, which is the cornerstone for the rest of the proposed model. With evidence indicating that there is a significant relationship between ethnicity and institutional deliveries, there is a solid reason to seek ways to adapt the services in order to accommodate them to the patients' cultural preferences, which is the next link in the proposed model.

Second, starting from culturally-adapted settings along with medical personnel's cultural competency, the findings provide evidence regarding changes in behaviors and perceptions about medical care, which go in hand with the provision of appropriate and culturally adequate services, such as the option to choose the position during childbirth. In addition, it is important to reflect upon the power dynamics between medical personnel and patients, which may need to change in order to allow for an appropriate provision of health services (changes in medical personnel behaviors and perceptions). Third, this dissertation provides evidence that links the availability of culturally appropriate childbirth services with increased satisfaction, and increased proportion of institutional deliveries in cantons with high indigenous populations. The mechanism through which these two elements are connected is a reduction in the delay of seeking care (the first delay in Thaddeus and Maine's 1994 framework), fueled by a feedback loop between the provision of appropriate childbirth services and changes in providers', and patients' behaviors.

Lastly, this dissertation assessed the direct effect of the availability culturally adequate childbirth services on maternal mortality, yet there were no statistically significant relationships found at the province level. Nevertheless, the link between *culturally adequate childbirth services, and an increase institutional deliveries, and reduction in maternal deaths*, is still relevant for theory and

practice. This is because, due to data limitations, the quantitative results of this portion of the analysis are not robust enough to disprove these connection which is widely accepted among theorists and experts.

Institutional births are a means to an end.

Although institutional births are often considered in the literature as desired outcomes, it is important to recognize that they are only a means to an end. The desirability of institutional births is reflected, among others, by the WHO's advocacy for ensuring quality maternity care services and "skilled care at every birth" (referring to doctors, nurses or midwives). Yet, it is also important to reflect that home births should not be regarded as an undesirable outcome in themselves. An adequate monitoring of the mother and baby's health during pregnancy, along with sanitary conditions during a childbirth that occurs within indigenous traditional medicine, can mitigate important sources of complications during home childbirths, and therefore, can also be considered as equally valid as births attended by doctors, nurses or midwives. This has been, in part, implicitly recognized by how the WHO defines indicator number 3.2.1 of the Sustainable Development Goals (SDGs), since it indicates that births attended by 'skilled personnel' are those attended by doctors, nurses or midwives "trained in providing life-saving obstetric care, including giving the necessary supervision, care and advice to women during pregnancy, childbirth and the postpartum period, to conduct deliveries on their own, and to care for newborns" (United Nations Statistics Division, 2016, p. 3). Therefore, it is important to keep in mind the way indicators are defined, and the assumptions behind them, matter. For instance, by including an indicator on institutional births within the SDGs goal of reducing maternal mortality rates, there is an assumption regarding the relationship between these two factors. In conclusion, it is important to keep in mind that institutional deliveries are not the final desired outcome, but one route to reducing maternal mortality rates.

Implications for Cultural Competence in Evaluation

Multicultural Validity

The evaluation of culturally competent services recognizes the importance of incorporating medical and indigenous traditional medicine knowledge, therefore, by translating the findings from this study to the evaluation field means that evaluation should also consider that the validity of its findings may be viewed from different perspectives. This dissertation considers that "validity may be examined through different lenses and in the context of different applications" (Kirkhart, 2013b, p. 134), so it aims to be centered in culture and it recognizes that culture infuses all understandings. For this reason, Kirkhart's five justificatory perspectives for multicultural validity served as one of the guiding frameworks for the choice of methodology, and her model is regarded as a useful tool to analyze the various dimensions of knowledge claims with a multicultural perspective. These five justificatory perspectives allow evaluators to deconstruct the bases on which validity is argued, and analyze validity arguments through different lenses. Therefore, I reflect here upon how each one of these perspectives was incorporated in the study in order to illustrate the usefulness of applying multicultural validity in all of its facets.

First, including a relational perspective, as Symonette (2004) indicates, is a recognition that evaluation is grounded in social relations and that, epistemologically, evaluators and the diverse stakeholders are interconnected. Through the design, field research and analysis components of this dissertation, I was able to reflect as an evaluator about my own stance, situation, and relationship with the interviewees, as well as deepen my understanding about the quality of relationships among evaluation participants and places. Therefore, in order to recognize that the validity of this dissertation's findings might be examined through different lenses, if was fundamentally important to include the perspectives of medical providers, health administrators and indigenous patients and to understand the relationships among these stakeholders.

Second, the methodological, and the experiential perspectives of multicultural validity go hand in hand with the relational dimension. This is because the choice of a mixed methods approach allows

an evaluator to understand not only the extent to which the policy affected the population, but also understand the relationships between stakeholders and how these may affect the desired outcomes. Therefore, a mixed methods approach is not only useful for complementarity and triangulation purposes, but is fundamentally important to improve multicultural validity by incorporating different perspectives. In addition, by having a strong common shared experience –being pregnant while conducting interviews about childbirth– allowed me to gain trust, and to better understand and relate to the life experience of participants, therefore opening the possibility to look at the evaluation's validity arguments through another lens.

Third, regarding the theoretical perspective of multicultural[39] validity, this dissertation examined the congruence of the theory underlying the program, the evaluation, and assumptions of validity. This was possible, in part, through the review of Latin American literature on interculturalism, but also through the use of qualitative methods, which allowed me to include and compare the perspectives from medical personnel and Shuar patients. Yet, due to time limitations and the need to reduce the scope of the study, it was not possible to delve deeper into the assumptions of Shuar women regarding how they would assess the theory behind the adaptation of childbirth services in hospital settings, and about the evaluation's main assumptions. Therefore, there is a need to seek mechanisms to better incorporate the cultural perspectives of the various stakeholders regarding the rationale and theory behind the programs, and also investigate more deeply indigenous ways to determine merit/worth in the local context (indigenous evaluation).

Lastly, it is important to consider the social consequences of judgments and understandings, and the actions taken based upon them. This applies not only to the way the evaluation is conducted, but also to the potential uses of evaluation findings. For this reason, this concluding chapter includes recommendations that are aimed to reduce ethnic disparities in access to care, and to improve the understanding of indigenous traditions regarding childbirth.

[39] It is important to mention that Kirkhart's conception of "multicultural" does not reject interculturality

In conclusion, Kirkhart's (2013) five justificatory perspectives of multicultural validity present a useful framework for the process of designing and conducting evaluations because they unpack the different facets of multicultural validity and encourage reflective thinking among evaluators and policymakers. Although this framework is applicable to all kinds of evaluations, it is even more relevant for evaluations of programs in culturally diverse contexts, and especially programs related to the provision of culturally appropriate services. This is because an evaluation about culturally competent services that does not center validity in culture will be missing a core element, since its findings might not be viewed as valid in the eyes of the population of interest. Thus, the same rationale regarding how culturally adequate childbirth services have the potential to improve health outcomes among indigenous people can be applied to evaluation practice. In order for evaluation to be useful and valid for indigenous populations, it needs to reflect their worldviews and their perceptions on ways to determine interventions' merit/worth, thus recognizing the existence of multiple versions of realities.

Reflecting upon the nine stages of Culturally Responsive Evaluation (CRE)

Since one of the intended purposes of this dissertation is to reflect upon how evaluation can be tailored to clarify the underlying mechanisms behind how childbirth services are provided in a multicultural context, the CRE framework (Frierson, Hood & Hughes, 2002; Hood, Hopson & Kirkhart, 2015; and Frierson, Hood, Hughes & Thomas, 2010) was used as a guiding framework to conduct the research, and is reviewed in its applicability to this study. Hood, Hopson and Kirkhart (2015) indicate that CRE is carried out in nine stages in order to create accurate, valid, and culturally-grounded understanding of the evaluand. Therefore, this dissertation illustrates some of the difficulties that evaluators may face when aiming to follow CRE's nine stages in order to center evaluation in culture. Thus, this dissertation's contribution to CRE theory is through a reflection of the practical applicability of this theoretical framework.

The first stage of CRE, which involves placing particular attention to the context and history of the location in which an evaluation will be conducted, is of fundamental importance and of relative

ease in its application. On the other hand, evaluators may face serious difficulties, in real life settings, when aiming to incorporate CRE's recommendations in the early stages of engaging stakeholders, identifying the purpose of evaluation, and framing the evaluation questions. These difficulties may be mainly due to time and resources constraints, and also due to pre-set evaluative objectives. The experience of conducting this dissertation illustrates some of the potential difficulties in adhering to some of the CRE's recommendations in the following stages:

-Stages 2 and 3: Engaging stakeholders, and identifying the purpose of the evaluation. While CRE suggests that the evaluation should engage and include stakeholders from multiple perspectives, and understand power issues and the intent of the evaluation from the perspective of multiple stakeholders, this might prove difficult in the early evaluation design phases. In particular, it will be difficult when the evaluators are geographically distant from stakeholders, when the evaluation is performed by a third-party external evaluator, and when time is a serious constraint. Although this dissertation would have benefited from engaging with stakeholders and understanding the intent of the evaluation from multiple perspectives in the conception of its research proposal, time and geographical distances were limiting factors. Nevertheless, evaluators that face this kind of issues should reflect about possible power issues in these early stages, and try to engage stakeholders even if it is later in the evaluation process.

-Stage 4: Framing the evaluation questions. CRE suggests working with stakeholders in the process of framing the evaluation questions in order to reflect on nuances of meaning, and how different types of questions may limit or expand what can be learned from an evaluation. Evaluators may face similar constraints in this stage as those described in stages 2 and 3, above. The difficulties are related to time and cost constraints, and distance from stakeholders. In the particular case of this dissertation, the research and evaluative questions were based upon an extensive literature review, and on the existing theoretical frameworks related to the topic. Yet, the questions should have ideally be framed through a participatory process with the different stakeholders in order to make

sure they were not limited to certain cultural/professional viewpoints. In order to address this issue, this dissertation aimed to informally validate the evaluation questions when speaking with public health officials and the Shuar Federation president in order to at least ensure the relevance of the questions.

The problems regarding physical distance from stakeholders and time constraints are also typically present in international organizations, centralized public offices, and large NGO settings in which central offices in charge of evaluation design may be disconnected from stakeholders, and evaluation may operate under time pressures. Moreover, evaluations are often commissioned to third parties through Requests for Proposals that already contain pre-set evaluation questions, which can limit the extent to which evaluators can incorporate stakeholders' views in the framing of the questions. In these situations, evaluators and evaluation commissioners should at least be cognizant of how the evaluation questions may limit what can be learned from an evaluation.

While there can be some difficulties and external limitations in following CRE's recommendations in the stages prior to the evaluation design, evaluators may face less external constraints in the next stages related to evaluation design, data collection and analysis (stages 5, 6, 7 and 8):

-Stage 5: Evaluation design. Making sure that the evaluation design is appropriate to the questions and the context may depend more on the evaluator's competencies and awareness of the context than on the possibility of including stakeholder's perspectives within the design. The application of CRE's recommendations for evaluation design face practical limitations that are more related to the evaluators' competencies than to external constraints. One way to overcome some of the issues in evaluation design is through the use of mixed methods, since they allow for gaining a broader understanding of the evaluand through multiple perspectives.

-Stage 6: Select and adapt instrumentation. Making sure instruments are adapted to the local context may not be as difficult as engaging stakeholders in the framing of the question since, at this stage, the piloting of instruments with stakeholders may be conducted more easily just

before the data collection on site. For instance, this is the approach that was undertaken in this dissertation's interview protocol tuning process in order to inspect the protocols for cultural bias in both language and content.

-Stages 7 and 8: data collection and analysis. In practice, the application of CRE's recommendations regarding culturally respectful and context-sensitive data collection and data analysis procedures will be very much dependent on the cultural competency of the persons involved in data collection. This point was especially pertinent in evaluating the provision of culturally adequate childbirth services. Thus, evaluation practice could borrow from Capinha-Bacote's (2002) framework of cultural competency in health care settings in order to analyze the various dimensions of evaluators' cultural competency. In addition, as the CRE framework suggests, it might be necessary to involve cultural interpreters and/or stakeholders as reviewers to assist in interpretation.

-Stage 9: dissemination and use of the results. This stage is very important since it has the potential for positive change. The dissemination of the results should also consider the different ways in which stakeholders with different cultures and backgrounds may perceive the findings, and consequently use the results to inform actions for positive social change. Therefore, in this dissertation's particular case, I intend to summarize and translate the main findings in order to share them with the stakeholders (Shuar Federation and MSP).

In conclusion, the main implications of this dissertation's evaluative process and findings serve as a reflexive exercise in which the different stages of CRE are reviewed. The lessons-learned through the research process shed light on some of the practical ways evaluators may apply CRE's suggestions, and on some of the difficulties evaluators may face at particular stages. Overall, by reflecting about, and aiming to improve the cultural responsiveness in every stage, both the credibility and utility of evaluation results should be increased.

Beyond building rapport, extreme shared experiences can help overcome cultural barriers to gain deep intercultural understanding

The experience of designing the interview questions, conducting interviews with Shuar women about their birthing experiences, and analyzing them while I was pregnant, not only allowed me to build rapport and obtain deeper insights from the interviewees', but also made me reflect about essential human life experiences, such as delivering a baby, that transcend cultural differences. Good practices for improving cultural competence in evaluation include developing awareness of the cultural context surrounding the evaluation, and establishing interactive and trusting relationship with communities involved in evaluations. Yet, there are some extreme shared experiences that may go beyond the understanding of the "other" cultural group that can bring the evaluator to a level of understanding as an insider of a different type of grouping that is not confined by cultural barriers. Moreover, Shuar women's recommendations about the preferred vertical position during childbirth were not only useful in helping to understand indigenous traditions regarding childbirth within the scope of the study, but were also considered as an important source of legitimate knowledge for my own childbirth experience. Shuar women's knowledge about childbirth was not regarded as something appropriate only for indigenous people, but as an incredible source of knowledge that can be put into practice by any woman, regardless of her ethnic background. Therefore, even though it will not always be possible to coordinate evaluations in order to match extreme shared experiences between the evaluator and the stakeholders, extreme shared experiences can allow for a deeper understanding that can bring down cultural barriers. In other words, as Rebien (1996) indicates, epistemologically, evaluators and stakeholders are interconnected, and they influence each other, as together they co-construct evaluation findings. This goes in line with the next implication for culturally competent evaluations: moving towards intercultural transformative evaluation.

Going beyond multiculturalism in culturally competent evaluation towards intercultural transformative evaluation

Going beyond multiculturalism in culturally competent evaluation towards intercultural

transformative evaluation means to not only understand and be responsive to local contexts, but to integrate two or more authentic and legitimate realities with the purpose of giving voice and improving the living conditions of marginalized groups. There are some lessons for evaluation that stem from reflecting about this dissertation's findings concerning what cultural competency means in the provision of childbirth settings in Ecuador, and about the concept of interculturalism which is present in Latin American literature on the topic of culturally appropriate health services. Furthermore, there are important parallels that are found in transformative evaluation framework (Mertens, 1999) and literature about interculturalism which can help in developing a new understanding that may go beyond multiculturalism in CRE.

The literature review and findings about cultural competence in health care settings can be used as an analogy to reflect upon cultural competence in evaluation. This dissertation's findings and implications for practice suggest that, due to the relational nature of the provision of health services, there is a need to consider health care providers' cultural awareness, skills, knowledge, encounters and desire. As Campinha-Bacote (2002) indicates, cultural desire is in the center of the process of cultural competence, since it is the motivation of *wanting to*, rather than *having to*, engage in the process of becoming culturally aware, knowledgeable, skillful, and familiar with cultural encounters. This notion can also be applied to evaluation practice. Moreover, in order to truly provide intercultural childbirth services, medical personnel need to not only know about indigenous women's traditions, but also to integrate traditional knowledge into their medical practice.

Therefore, the implications for cultural competence in healthcare settings can be translated to evaluation practice by going beyond the *need* to be respectful and sensitive to other cultures, in order to *choose* to learn, exchange and integrate the knowledge from other cultures by recognizing the legitimate value of different perspectives. As Ortega explains, interculturalism signifies the relationships, interactions and functions between people or cultures given by the coupling of two or more authentic and legitimate realities (Ortega 2010, p.129). Moreover, an intercultural

transformative evaluation approach can incorporate and may go beyond the recognition that validity may be examined through different lenses (multicultural validity), and the recognition of the centrality of culture in the theory and practice of evaluation (CRE). This is because an intercultural evaluation approach, which can be viewed within the scope of CRE, would recognize the value of integrating different perspectives and challenging our own professional stances as evaluators. So, just as doctors can challenge what they learned in medical school about the "appropriate" (and often the only) position for childbirth in order to incorporate traditional knowledge about birthing positions, evaluators can challenge the way they conduct evaluations and integrate alternative ways of valuing.

This dissertation's findings regarding the potential to reduce ethnic disparities in access to services through the provision of culturally competent services can be also translated to important reflections about evaluation theory and practice. In particular, this dissertation's findings illustrate how evaluation may be aimed at social change to improve the lives of marginalized groups. In this line, transformative evaluation recognizes that evaluation is not value-free, and that knowledge is not neutral (Mertens, 1999), so the purpose of knowledge construction is to help people improve society. So, in addition to integrating knowledge from different cultures in the development of evaluation theory and in alternative evaluation practices, evaluators can be considered as social-change agents who should interact and get involved with the culture of the communities where evaluation is taking place. Thus, an intercultural evaluation approach aligns with the transformative paradigm in evaluation due to the recognition of the need for methodological inclusiveness, and a focus on social justice as a principal value.

In conclusion, this dissertation has reflected upon and recognized that the validity of evaluation findings may also be viewed from different perspectives. Moreover, it has adhered to CRE's stance of regarding culture as a central aspect in the theory and practice of evaluation. Therefore, this dissertation illustrates how demographic, socioeconomic, and contextual characteristics, as well as

locations, perspectives, and characteristics of culture matter fundamentally in evaluation. Furthermore, by translating the findings about cultural competency in health settings and the notions of interculturalism in health into evaluation theory and practice, this dissertation proposes to go beyond multiculturalism in order to move towards an intercultural transformative evaluation approach that integrates western-based evaluation assumptions and theory with other cultures' ways of knowing and valuing.

Further Research

Due to scope and data limitations, this dissertation was not able to study some important areas and topics that could be interesting for further research: First, although this dissertation attempted to evaluate the effects of culturally adequate childbirth services on maternal mortality rates, the level of analysis and few data points after the interventions did not produce conclusive findings. Therefore, further research with more data points will be needed in order to provide more robust results. In addition, as the literature review indicated, there is a lack of research about the direct effect of culture and of the provision of culturally adequate services on maternal mortality.

Second, this dissertation's findings indicated that the availability of culturally adequate childbirth services improves the proportion of institutional deliveries and perceptions of health care among indigenous women in Ecuador. Yet, an area of further research is to measure the cost-effectiveness of this type of policy, and how it compares to other policies that aim to increase the proportion of institutional deliveries.

Lastly, there is a need for further research on the notion about how evaluation can move towards an intercultural transformative approach from a Global-south perspective. That sort of research may build on CRE, multicultural validity, and on Indigenous Evaluation Framework to develop a more complete framework that incorporates other cultures' ways of valuing and determining merit/worth.

This chapter has presented a brief summary of the main findings about the extent to which culturally

adequate child delivery practices affect access to healthcare and health outcomes in Ecuador. In addition, it described the implications of the research findings on three different dimensions: practice, theory, and cultural competence in evaluation. Lastly, this chapter concluded with some ideas for further research inspired by this study.

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Appendices

Appendix A:

Interview Protocol Questionnaire

Introduction

This is a guideline for the interviews. It consists of 2 sections that touch on the different levels that are relevant to the research (as explained in Chapter 3). It also includes a set of background questions to introduce. The interviews will be conducted with Shuar indigenous women (and some family members) in Ecuador. The interviewer will explain that participation in the interview is voluntary and will ask for verbal informed consent.

This interview protocol draft will be refined with inputs from pilot testing and from feedback given by the Shuar Federation.

The interview will be divided in the following 2 sections:

- Section 1.- Access to health centers and institutional deliveries
- Section 2.- Culturally adequate childbirth services

Background questions

a) Where were you born?
b) How old are you?
c) Are you married? If so, at what age?
d) What is your current occupation?
e) What was the last year of school you attended?
f) How many children do you have? How old were you when you had your first child?

Maternal mortality determinants

1. Please describe your access to water and sanitation, and the distance and mode of transportation from your house to the closest health facility. (Will ask each one in separate questions.)
2. Approximately, how much out of pocket health expenses did you incur in your last pregnancy and childbirth? In which items or services was the money spent?
3. Have you been vaccinated against any disease? If so, which one(s) and when?

Section 1 - Access to health centers and institutional deliveries

4. Did you receive any care or council during your last pregnancy? By whom? Please explain what type of care/council you received.
5. From the last one to the first one, please describe your pregnancies and childbirth experiences:

- Please describe the day in which you gave birth, who was there with you and what were their roles? Who helped you during labor? Please describe your interactions with the doctor, midwife, or anyone else who assisted you during labor
- Were your family or community members allowed to accompany you during delivery?
- Please describe any cultural traditions surrounding pregnancy and childbirth.
- Please explain where you gave birth and how the place and people that aided you made you feel

6. Where and why did you choose that particular place to give birth?
7. Who made the choice of where to give birth? Were you part of the decision?
8. What are the main factors that made you choose or not choose to give birth at a health care institution? Why?

Section 2 – Culturally adequate childbirth services + Understanding the theory of change of culturally adequate childbirth services

For all women interviewed

- What type of drinks/food did you eat just before and after labor? Were they appropriate/adequate to your traditions?
- In which position did you give birth? Why did you chose that position?
- What happened to the placenta after labor? Explain if what happened was appropriate to your traditions.
- In which language did you communicate with the person(s) who assisted you doing labor? Was that the language you feel most comfortable with?
- Please describe the elements or experiences during childbirth that you think were appropriate for your culture and your traditions, and which ones were not. Was there something missing to make you feel better during childbirth?
- Please describe, in your opinion, what are the main factors that contribute to having a good pregnancy, a good childbirth experience, and healthy babies and mothers after childbirth?
- What would be your ideal setting, environment and accompanying people during delivery? Which of these elements do you think are influenced by the traditions/culture that surrounds you? Why?
- Please describe how satisfied you were with your childbirth experience on a 1 to 5 scale, and why.
- Would you still choose or recommend a friend to give birth at the place you chose for your last baby delivery? Why or why not?

- Explain in your opinion, why do maternal or infant deaths occur? Is there something that can be done to prevent them?

For sites where culturally adequate childbirth services are available:

- At the time when you gave birth, did you know about the availability of culturally adequate childbirth services? Did this knowledge influence your decision? How?
- What is the story of how these services became available in your community?

Appendix B: Qualitative Analysis Coding Scheme

Table A.1: Themes and Codes for Qualitative Analysis

Research Question	Main Themes	Sub-themes	Codes
a) What are the main factors associated with the choice of institutional delivery in a multicultural developing country like Ecuador?	1. Understanding Shuar women living situation, their views and traditions related to childbirth. (Also in line with maternal mortality determinants)	Interviewee characteristics (&MM determinants)	Education / water and sanitation / age / age when first kid / job title / distance to nearest health facility
		Pregnancy experience (&MM determinants)	Infections, bleeding / vaccines / prenatal checkups
		Traditions	Food/ traditional medicine / position /accompaniment
	2. How Shuar women decide upon the place where they are going to deliver their babies (the main factors that influence indigenous women's decisions to deliver their babies at home versus at a health care institution).	Childbirth: Perceptions about home and hospital births	Home delivery / Why chose / Negative perceptions. Hospital delivery / why chose / positive and negative perceptions
		Who helps decide (family influences)	Childbirth/ Who decides
		How Shuar women perceive culturally competent childbirth services, and what is their ideal setting for childbirth	Ideal setting Cultural adequacy / position /accompaniment / food/ placenta Why chose home or hospital delivery Traditions Hospital infrastructure
		Beliefs/thoughts about important factors for good pregnancy and childbirth	Factors for good pregnancy and childbirth
b) To what extent does the availability of culturally adequate childbirth services improve: the proportion of institutional deliveries, health outcomes (maternal mortality rates) and perceptions of health care in Ecuador?	3. Whether the available culturally adequate services improve/affect their health outcomes and perceptions of quality of health care.	Childbirth: Perceptions about home and hospital births	Satisfaction / Recommended place Why chose home or hospital delivery Hospital infrastructure
	4. Medical personnel's perceptions about Shuar women, and perceptions and knowledge about culturally adequate services.	Cultural competence	Cultural adequacy Perceptions of shuar people Quality of childbirth Intercultural birth Hospital infrastructure Ideal setting

Appendix C:

Segmented Regression Analysis Results at the Canton Level - % Institutional Deliveries

Table A.2: Parameter estimates from the segmented regression models predicting % of institutional deliveries in each of the 12 cantons with at least +/- 3 years of information since the adaptation of intercultural services (2003-2013)

Canton	Baseline trend β1	Level change after policy β2	Trend change after policy β3	N	R-Squared
Paute	3.385**	-2.628	-2.315	11	0.801
	(0.536)	(3.818)	(1.360)		
Camilo Ponce Enríquez	6.862**	1.561	-1.989	11	0.912
	(1.229)	(9.183)	(3.165)		
Alausí	1.086**	0.521	2.859**	11	0.988
	(0.410)	(1.595)	(0.490)		
Colta	3.532**	-10.539**	5.684**	11	0.986
	(0.373)	(3.091)	(1.014)		
Otavalo	4.317**	-2.958	1.092	11	0.995
	(0.512)	(1.980)	(0.595)		
Saraguro	3.138**	5.656**	1.598**	11	0.997
	(0.207)	(1.753)	(0.580)		
Santiago de Méndez	6.549	-14.144	-4.254	11	0.23
	(5.249)	(8.900)	(5.369)		
Sucúa	1.192	-0.871	0.737	11	-0.064
	(2.070)	(7.834)	(2.645)		
Quito	0.564**	0.500**	-0.362**	11	0.999
	(0.021)	(0.172)	(0.056)		
Cayambe	2.423**	0.372	0.18	11	0.994
	(0.212)	(1.738)	(0.572)		
Píllaro	2.318**	1.9	-1.263**	11	0.995
	(0.243)	(1.364)	(0.390)		
Loreto	1.728	-2.875	1.9	11	0.822
	(1.193)	(4.539)	(1.511)		
All cantons	2.557**	-0.696	0.748*	2409	0.79
	(0.068)	(1.248)	(0.454)		

Notes:
Standard Errors in parentheses using Prais-Winsten method to correct for autocorrelation
Significance levels: * p<0.10 ** p<0.05

Table A.2 indicates that 5 of the 12 cantons experienced significant changes in either their level or their trends of % institutional deliveries after the intervention, which were positive in the majority of cases. Alausi and Saraguro had positive and significant immediate changes in the percentage of institutional births after the implementation of intercultural childbirth services. Moreover, in the case of Saraguro, this immediate positive change was also followed by an increase in the trend.

Considering that approximately 70% of the indigenous population of this canton belongs to the Saraguro indigenous nationality (INEC, Census 2010), this finding suggests that the adaptation of birthing rooms in the Saraguro canton might have been particularly tailored to meet the Saraguro indigenous population's needs.

Table A.2 shows that only Colta experienced a statistically significant negative change immediately after the implementation of intercultural services. Yet, after the negative level change, Colta experienced a positive statistically significant change in the trend after the intervention. On the other hand, while Quito shows a positive change in level after the implementation of intercultural childbirth services, it experienced a small negative change in the trend after the intervention. Yet, it is important to mention that since Quito is the country's capital, it a special case due to its larger population size and its close to 100% institutional birth rate. Lastly, Pillaro is the only canton that shows a statistically significant negative change in the trend after the intervention, which might be an interesting case for future studies.

Appendix D

Segmented Regression Analysis Results at the Province Level -MMR

Table A.3 shows the segmented regression analysis estimates of 12 provinces with data of at least 3 years prior and after the adaptation of intercultural services (2000-2015).

Table A.3: Parameter estimates from the segmented regression models predicting Maternal Mortality Rates in each of the 9 Provinces with at least +/- 3 years of information since the adaptation of intercultural services (2000-2015)

Province	Baseline trend	Level change after policy	Trend change after policy
Azuay	-0.37	22.199	-6.74
	(3.157)	(29.363)	(7.465)
Chimborazo	-0.609	21.559	-2.391
	(3.944)	(26.500)	(5.376)
Imbabura	-12.432**	48.205	6.232
	(4.844)	(31.516)	(6.904)
Loja	-2.652	41.162*	-7.65
	(1.876)	(19.980)	(4.580)
Pichincha	-1.863**	7.877	-0.38
	(0.734)	(7.764)	(1.785)
Tungurahua	1.25	49.813**	-7.935
	(2.651)	(20.763)	(4.753)
Esmeraldas	-2.194	54.169**	-13.778
	(1.243)	(23.401)	(8.012)
Guayas	2.591**	-13.652	0.584
	(1.045)	(12.840)	(4.707)
Santa Elena	-2.51	-1.517	-0.782
	(4.126)	(44.267)	(17.174)
Morona Santiago	-7.938	34.746	13.177
	(7.198)	(29.977)	(7.913)
Sucumbíos	-5.884	-23.395	5.507
	(19.399)	(61.919)	(20.343)
Orellana	-5.235	36.689	6.59
	(3.162)	(21.229)	(4.281)

Notes:
Standard Errors in parentheses using Prais-Winsten method to correct for autocorrelation"
Significance levels: * p<0.10 ** p<0.05