Household Valuation of Healthcare Provider Attributes in Gulshan-e-Sikandarabad Colony, Pakistan

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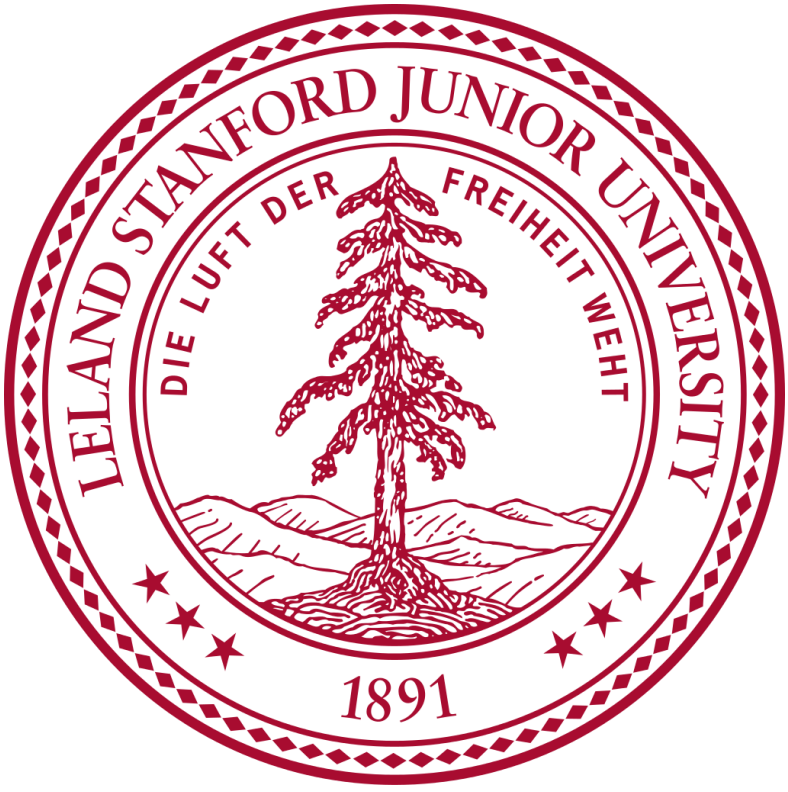

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Abstract

Individuals in underprivileged urban locales in low and middle income countries (LMIC's) have a substantial choice set of healthcare providers (formal and informal) to choose from when deciding where to seek healthcare. Few studies quantitatively model healthcare provider choice in LMCI's *and* distinguish between formal and informal providers, leaving both policy makers and other actors in the health system inadequately informed about how to design health interventions that reflect the preferences of the population being served. This thesis explores how households' value different healthcare provider attributes when seeking healthcare in Gulshan-e-Sikandarabad Colony, a low income urban settlement in Karachi Pakistan using a mixed-methods analysis. I administer a large household survey of 718 households, where I collect data on healthcare provider visits for each member of the household in a given month, as well as a qualitative study where we ask households about how they choose between different providers. By using a conditional logit model for the quantitative data and by categorizing the qualitative data into sub themes, I determine several striking findings from the data. The three main ones are as follows: Even though Sikandarabad Colony *appears* to be a competitive market (given the high density of providers), households are not highly sensitive to price, but exceedingly sensitive to small changes in distance, especially for informal providers. This suggests that healthcare market is better described as a collection of localized markets as opposed to one competitive market. Secondly, I find in the quantitative and qualitative data great value placed on how sensitively providers respond to gender-related concerns, both in terms of the physical partition of clinics and in the way providers interact with women. Finally, two attributes of providers come through independently in the qualitative data: the religiosity of informal providers and the approach of the provider, which roughly breaks down into time given by the provider to the patient, mannerisms of provider, and the informal financial arrangements that the provider has with the patient or his/her family. While there is general mistrust of healthcare providers and the health system amongst residents of Sikandarabad Colony, the attributes that individuals' value suggest what may constitute as trust in such an environment. This has a range of implications for actors and policy makers in the delivery of healthcare in similar settings.

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[1] Taha Allawala, Zainab Anwar, Abdullah Nasir, Shanze Zehra, Muhammad Mekaiel, Fatimaa Sohail, Ayad Arif Shahrukh Farogh, Laiba Masood, Fazle Husain, Nabeeha Mahmood, Taimur Ahmed Mian, Uzair Saqib, Asra Muhammadi, Maryam Shaikh, Mariam Munir, Zainab Saeed, Muhammad Jawad, Ghalib Qadri and Shariq Jumani

Chapter 1
Introduction

In the last three decades, there has been rapid and sustained growth in the private health sector in Pakistan, a trend that is mirrored in other countries in South Asia (such as India, Nepal and Bangladesh) as well as globally in many low and middle income countries (LMIC's). (Mills et al, 2002, Hanson and Berman, 1998; Forsberg et al 2011, Wagstaff, 2013) Today, more than 80% of all outpatient visits and 60% of all inpatient visits in Pakistan are to a private sector provider (World Health Survey, 2010). This is reflected by the fact that the majority of payment for healthcare services is out of pocket (Dupas, 2011). A large percentage of total healthcare provision in several LMIC's consists of the informal sector, which, for the purposes of this thesis, will refer to the provision of healthcare by providers who are not trained to practice medicine by a credited degree granting medical institution (Sudhinaraset et al, 2013). The percentage of informal healthcare in Pakistan's health system is believed to be similar to India and Bangladesh, where the percentages are estimated at 55% and 89% respectively (Sudhinaraset et al, 2013)

It is widely recognized that the increase in demand for private sector healthcare is driven by discontent and frustration with the quality and delivery (or lack thereof) of healthcare offered by the public sector. (Banerjee and Duflo, 2011) Yet, few studies have quantitatively measured how people weigh the different attributes and characteristics of healthcare providers when deciding where to seek healthcare for themselves or members of their families. The current quantitative

literature from LMIC's largely focuses on price and distance (omitting a range of other relevant variables) and crucially also does not often disaggregate based on healthcare provider type (formal vs. informal providers). On the other hand, the literature related to Pakistan on household healthcare preferences and health-seeking behavior has mainly been of a qualitative nature.

A major gap in current literature (especially in the context of Pakistan), is the lack of studies that analyzes healthcare-seeking behavior using mixed-methods approaches. Such studies would not only give researchers and policy makers quantitative estimates of the effects of different factors on health seeking behavior, but also of the unobservable factors that shape the decision to seek healthcare a particular provider - thus painting a richer and more comprehensive picture of what drives healthcare choice. In light of this, my thesis aims to answer the following question using a mixed-methods research design:

1) How do low-income individuals value different attributes[2] of healthcare providers in Gulshan-e-Sikandarabad Colony (GSC), Pakistan?

The question stated above allows us to develop a rich understanding of the *extent to which* different factors influence choice of provider in developing countries such as Pakistan, and consequently encourages one to think about the potential design of health policies or interventions by governmental or non-governmental actors that aim to increase utilization of health services. By using quantitative and qualitative estimates of how individuals weigh price, distance and other relevant factors when seeking healthcare, one can measure the tradeoffs a government or

[2] The attributes that we look at are price, distance, waiting-time, gender segregation in clinic, and whether the clinic is on the main road.

non-governmental actor faces when it prioritizes say, subsidizing existing providers over increasing the number of health facilities in the country, or vice versa. The research question also informs the *degree* to which government policies or actions by non-governmental actors should take into account local, contextual factors such as gender segregation of clinics if the aim is to increase demand for the service being delivered. In Pakistan today, several NGO's are building free or subsidized clinics around the country, and provincial governments are experimenting with new models of healthcare delivery and financing by covering the operating expenditures of non-governmental or quasi-governmental entities (TRF, 2011). My research question can potentially help inform these new models of healthcare delivery.

At the outset, it is important to note that this thesis is **not making a single or a set of causal claims** about factors that determine healthcare-seeking behavior. On the contrary, the **thesis analyzes how different factors are *associated* with the choice to seek healthcare at a particular facility - with supplemental findings from qualitative research.**

This study uses a data-set of household level choice in one low-income urban locale within Karachi to estimate the relative importance and the interplay of different provider characteristics in influencing the choice of healthcare provider(s). To analyze the survey data, I use a conditional logit model, which models choice of clinic as a function of provider characteristics. Rich qualitative insights are collected through 45 semi-structured interviews to supplement the conditional logit model. The qualitative data is used not only to interpret the quantitative

findings, but also to highlight independent factors which influence choice but are difficult to model quantitatively.

Through my analysis, I demonstrate a number of striking findings. (See Tables 7.2 and 7.3 in Chapter 7). The **first** finding is the very significant distance sensitivity of individuals (in healthcare seeking behavior) to small changes in distance, mostly in the informal sector. For informal sector providers, a 1 km increase in distance is associated with 32 percentage point decrease in the probability that healthcare will be sought at a given provider. For formal providers, a 1 km increase in distance is associated with 9 percentage point decrease in the probability that healthcare will be sought at a given provider. The distance estimates suggest that GSC should be viewed as a collection of localized markets as opposed to one large healthcare market, especially for informal healthcare. The **second** important finding is the relatively lower price sensitivity of individuals to changes in price. In the informal sector, a 100 rupee (USD 0.96) increase in price (mean = Rs. 447, USD 4.27) is associated with a 2.7 percentage point decrease in probability of going to a given provider. In the formal sector, a 100 rupee increase in price (mean = Rs. 1102, USD 10.5) is associated with a 0.3 percentage point decrease in the probability of going to a given provider. The price and distance marginal effects suggest potential monopolistic competition in the informal market, but this remains to be validated through future research. The **third** major finding of the thesis is the crucial role gender sensitivity of provider plays in choice of provider. Gender segregation in the informal sector is associated with a 32 percentage point increase in the probability that healthcare will be sought at a given provider. The qualitative research seems to suggest very strongly the

importance of gender sensitivity of the provider, from the physical separation of the clinic to the way in which the provider incorporates gender concerns in his interaction with female patients. The **final** crucial finding from the study, which mainly emerges from the qualitative research, suggests two important aspects of the provider which influence provider choice: religiosity and the approach of the provider, which refers to the time given by the provider to the patient, mannerisms of the provider, and the financial arrangements that the provider has with the patient or his/her family. Some of these attributes have implications for the kinds of soft-skills formal healthcare entities should seek to develop in healthcare providers operating in locales such as GSC.

While this exploratory study is specific to the community being studied, Gulshan-e-Sikandarabad (GSC), the methodology that I develop can inform similar studies in (with similarly constituted communities) Even though some of the qualitative findings may be difficult to generalize, some of the broader findings on localized markets and the role of distance and price in influencing provider choice are highly relevant for health policy and healthcare delivery in South Asia. As the global conversation on healthcare shifts more from “access” to “delivery” of services, this thesis comes at a timely moment.

Chapter 2

Background of Health System in Pakistan and Gulshan-e-Sikandarabad Colony

2.1 Overview of the healthcare system of Pakistan

Pakistan is a developing country with a population of more than 200 million people, making it the 7th most populous country in the world. It has a per-capita GDP of $ 1275 a year, in infant mortality rate of 66 per thousand births, and a maternal mortality rate of 178 per 100,000 births. (World Bank, 2016) Data from 2008 suggests that the country had over 20% of the population living below US $1.25 a day and 60% living below US $2 a day. (Shamim, 2014) Data since 2009 shows Pakistan's poverty related expenditure on health remains around 7-8% of the total poverty expenditure (Shamim, 2014). The government has consistently spent around 1% of GDP on healthcare between 2011 and 2015 and total GDP per capita spent on healthcare is 2.9%, or 37 dollars per capita. To put this into perspective, India spends 61 dollars per capita, Bangladesh 32 dollars per capita, and Nepal 39 dollars per capita on healthcare. However, given that such a high percentage of healthcare is sought in the informal sector in the aforementioned countries, these numbers are likely to be highly underestimated.

In theory, Pakistan is a single payer healthcare system. The public sector runs large teaching hospitals, district level hospitals, and first level healthcare facilities. The structure is outlined in the following figure 2.1. In practice though, the public system suffers greatly from mismanagement, corruption, and high rates of provider absenteeism, a trend seen in many other LMIC's. (Nishtar, 2013) In addition to this, even-though the public sector is technically "free" at the point of

service, the combined cost of long waits, travel time, and the costs of tests and medicines and tests incurred by patients (and/or their families) in an economic sense a visit to a public sector facility is extremely costly. (Khan, 2005, Nahar, 1998) The poor functioning of the public system has created opportunities for many different types of actors to begin delivering healthcare services to the Pakistan population, ranging from the bottom income quintile to the highest income quintile.

Figure 2.1

A very small percentage of individuals in Pakistan are covered by form of health insurance. In her comprehensive book on the country's healthcare system, *Choked Pipes,* Sania Nishtar (2013) writes that Pakistan is a mixed healthcare system, with both vertical and horizontal forms of health coverage, that, together, cover about 26% of the population. The horizontal systems include quasi-state institutions and Pakistan's commercial and corporate entities, whilst the vertical systems include the armed forces, the Fauji Foundation (a corporate entity linked to the armed forces) and the Government Employee Social Security Institute). Outside of these systems, there is no formal coverage for health expenditure.

Owing to the lack of insurance coverage in Pakistan, the percentage of out of pocket healthcare expenditure in Pakistan is over 90% of total private healthcare spending. (Lorenz, 2009). In December 2015, the government of Punjab, the most populous province in the country, announced a health insurance scheme whereby individuals below a certain income level would be covered to seek healthcare up-to Rs. 300,000 (USD $2886) for in-patient healthcare and Rs. 500,000 (USD 477) for out-patient healthcare annually. It will take several years for the policy to be fully implemented and outcomes to be assessed.

In the present, the lack of coverage in the Pakistani health system and the high percentage of out of pocket health expenditure has relevancy to my thesis because it makes the question of choice all the more pertinent: When individuals use precious and scarce resources to fully cover the cost of a healthcare visit, what attributes they value and how they make the decision about where to seek healthcare has implications for a range of actors who seek to increase the utilization of healthcare services.

Given that Pakistan's healthcare landscape is so complicated with such a wide range of actors, as described earlier, this thesis will not limit itself to making only policy recommendations and instead think of the various actors that deliver healthcare. In other words, the implications of the findings will be presented in a way that has relevance to both the minister of health and a local NGO that is building primary healthcare clinics in communities such as GSC.

2.2 The Context of Gulshan-e-Sikandarabad Colony

GSC is a large urban slum community in close proximity to the major port of Karachi (whose population ranges from 20-23 million) (World Population Review). GSC borders one of the major middle-income and commercial areas of Karachi. The total number of households in the community is around 8200, with an estimate cumulative population of 57,400. The density of households in the community is extremely high, as the map of households' surveyed shows (appendix C).

The major ethnic group in this community is Pashtun (approximately 82% of the community), a group that has had robust migratory patterns into the city of the Karachi in the last two decades, often moving into areas such as GSC. The average income in the community is approximately Rs. 20,016 month (USD 191), with an average household size of nearly 7 and a monthly average health expenditure of approximately Rs. 1667/month (USD 16). In my analysis, I only incorporated households (in this study) from the community that had at least one healthcare choice in the last month i.e. I don't include households that did not choose to seek healthcare, which brings down the sample under study from 718 to

658. I also excluded providers that had 3 or fewer visits (median number of visits to a given provider is 3) given the negligible market share of those providers (below 3 visits) and the entailed costs of acquiring such data benefits of this information for the purpose of analysis (explained later in data sources section). Finally, after dropping providers with spurious information (location coordinates that do not make sense) we are left with 626 households, or 87% of the total survey population and 64 health providers (36 informal and 28 formal). These households represent 1890 healthcare choices, or 94% of the total healthcare choices in the complete data-set. Descriptively, I find high utilization of health facilities. There were roughly 3 healthcare choices per household per month, or 0.43 healthcare choices per month per capita. This suggests a fairly substantial demand for medical healthcare, and gives us a sense of the number of facilities needed to adequately service a population of this size, conditional on health status of individuals not changing. The following table presents a broad range of summary statistics from GSC.

Table 2.1:

Variable	Outcome
Mean Income/Month (Rupees)	20,016
Mean Health Expenditure/Month (Rupees)	1667
Mean Number of Children per Family	4
Mean Family Size	7
Number of Households in Survey	718

Number of Households in Dataset	626
Total Number of Households in Community	8600
Healthcare Choices/Month	3

GSC is in many ways similar to other urban slum communities in Karachi, Pakistan (and South Asia), given its mean income and family size, however, it is important to also draw a distinction between this community and other communities. The first, as mentioned before, is that the community is a Pashtun community, and the references to religiosity of provider as well as the central role of gender may matter more in this community than others. Secondly, there is greater access to formal healthcare (when compared to similarly situated communities) given that the community is bordered by two large private hospitals that mostly cater to middle and upper-middle income quintiles in Karachi but are also frequently utilized by members of GSC. Finally, there is strong NGO presence here and the availability of heavily subsidized healthcare, which is not always an option amidst that individuals in other communities often have. The presence of the NGO clinic also slightly distorts the data, as future sections will elucidate, because individuals underreport their visitation to a welfare clinic receiving mainly religious donations (likely due to embarrassment or shame)

Chapter 3
Theory and Literature Review

3.1 Theoretical Frameworks of Healthcare Choice

In this section, I draw upon the prevailing frameworks of healthcare choice in the anthropology literature (Pathway and Determinant models of healthcare seeking) and economics (multinomial choice). I discuss extensively the benefits and limitations of each of these models, and argue that a multinomial choice model that formalizes the determinant models in anthropology, interpreted through and supplemented with the use of qualitative information, is the most comprehensive way to study healthcare provider choice. Not only is this an analytically rigorous way to get quantitative estimates of the association between different variables and the probability a given clinic is chosen, it also allows for us to take into account unobservable contextual factors that influence healthcare-seeking in informal urban and peri-urban locales.

3.1a Pathway and Determinant Models of Healthcare-seeking

The pathway model, pioneered by Suchman (1965) attempts, to comprehensively address the various steps within a patient's journey in seeking healthcare. Suchman proposes a model whereby healthcare-seeking can be viewed as a series of steps that start from recognition of illness to the use of different health facilities. Suchman argues that we may view "medical orientation and responses as intervening variables between social structure and medical healthcare." Other models of staged pathways in healthcare-seeking are proposed

by Fabrega (1972) and Igun (1979). Pathway models have tended to emphasize cultural and social factors in healthcare-seeking. They are useful in helping us understand how individuals interact with different components of the health system in seeking healthcare, and the complicated journeys made in environments with low levels of education and high information asymmetries. When used in conjunction with some of the broader work on the role of information in healthcare seeking**,** they can help us understand why individuals in low and middle income countries make decisions that do not fit the rational choice framework in traditional neo-classical frameworks, such as under-investing in preventive healthcare. (Dupas, 2011) The limitation of solely using pathway models to study healthcare-seeking patterns is that they do not allow researchers to measure *quantitatively* the relative effects of different factors (say cultural vs social) that may influence the pathways. Such models tend to emphasize *process* as opposed to discrete choice, which can only be effectively studied through micro-level choice data that models choice as a function of provider and level attributes.

Determinant models of healthcare-seeking tend to address this limitation, through categorical qualitative analyses of the variables that may be relevant in healthcare choice. Characterization of this literature by Kroeger (1983) suggests that "economic factors, conceptual and structural differences, and communication gaps" are relevant factors in healthcare-seeking. The International Collaborative Study on Healthcare argues that the determinants of healthcare-seeking can be broken down into a) predisposing factors b) enabling factors and c) health services system factors. Pre-disposing factors refer to demographic factors and household level attributes such as family composition and education levels, enabling factors

refer to factors such as geographical access to regular sources of healthcare, and health services system factors refer to the "structure of a health system and its link to a country's social and political macro system". This thesis does not address the second and third factor but aims to quantify how enabling factors such as distance as well other attributes of providers affect the choice of healthcare provider. The qualitative work that was conducted prior to the household survey informed which factors were most salient to be included in the conditional logit model.

3.1c McFadden and multinomial choice

Multinomial choice models aim to analyze a particular agent, or decision makers' preferences when the agent in question is choosing amongst a range of different options or alternatives. The econometric techniques to model discrete choice were pioneered through the work of Daniel McFadden in the field of industrial organization. Discrete choice emerged in response to the analytic limitations of single representative agent models to understand and measure individual choice behavior (McFadden, 1973). Discrete choice models are based on four fundamental assumptions. The first is that the choice is a discrete event, which is that a decision is a binary from a given set of alternatives. The second assumption is the utility towards a given object or choice varies across different individuals as a random variable. Thirdly, the consumer will end up choosing the option that gives highest utility, consistent with the standard economic framework of utility maximization or consumer theory. Finally, an important assumption in conditional logit models, is the independence of irrelevant alternatives, which

means that omitting a sub-set of the choice set will not change the parameter estimates in any systematic way (Greene 7th ed. 2010)

Discrete choice models have been applied in many different fields and areas. For instance, they were used to estimate the demand for different modes of transport when the BART system in California was being developed. (McFadden, 1974) They have been used extensively in market research. There is also a growing literature of discrete choice models being applied to the field of healthcare provider choice. However, few studies of the sort address these issues in developing countries and none in the Pakistan context. Therefore, the field is wide open to study healthcare provider choice using discrete choice models.

3.2 Healthcare Choice in Low and Middle Income Countries:

In this section, I summarize some of the prevailing quantitative and qualitative evidence on how individuals make choices when deciding which healthcare provider to go to. I draw upon studies in developing countries in general before focusing on the current literature from Pakistan.

3.2a Quantitative Literature:

Understanding how patients value different characteristics of provider and their ultimate provider choice has a history in the economics and public health literature. Much of the literature in this area grew from debates surrounding the impact and the effectiveness of user fees in public facilities, a central component of the suite of policy recommendations made by the World Bank (1987) only a few years after a commitment to universal primary healthcare at Alma Ata in 1978.

(WHO, 1978) Several papers tried to estimate the price elasticity of demand for healthcare in different countries, using the estimates to argue for or against the policies of user charges. For example, some of the earliest studies in this area by Heller (1982) and Akin (1985) measured demand for outpatient healthcare as a function of several economic variables including price, travel time, assets owned by household and waiting time, in Malaysia and the Phillippines respectively. They find that these "economic variables" are largely insignificant in determining provider demand. It is important to note here that travel time is not an adequate proxy for distance (as my thesis will suggest) This is because distance to a particular facility imposes costs on individuals that are more than simply time costs (social costs of leaving the home, money costs of transport etc.)

However, other studies reached different conclusions. For example Gertler and van der Gaag, who study healthcare markets in Peru and Cote d'Ivoire found sharp reductions in the utilization of facilities as price increases. (Gertler and van der Gaag, 1990) Similar results were found in rural Ghana by Waddington and Enyimayew (1989). More recent work in China and India also tries to measure price elasticity of demand for healthcare. In the India study, the author uses a mixed logit model to estimate the price elasticity of demand for healthcare in rural India. (Borah, 2006) The author finds price and distance are significantly correlated with the choice of provider, and interestingly find that the demand for children's healthcare is more price elastic than the demand for adult healthcare. In the study on rural China, Zhou et al (2011) find that the price sensitivity of demand for in-patient and out-patient healthcare is similar, and that the two largely function as substitutes to one another. A recent paper by Santosh Kumar

et al (2014) estimates the causal impact of distance to a health facility on the likelihood of in-facility birth, which is very important for health policy in India given the high rates of maternal mortality in the country. They find that each additional kilometer in distance from a facility providing health services is associated with a 4.4% decrease in probability of birth in facility. It is important to note that this estimate corresponds to maternity related healthcare, which poses many other barriers beyond distance. (Mohanan et al, 2013) Therefore, the effect size of one kilometer on probability of visiting should be contextualized as merely adding to the host of other factors that deter mothers from giving birth at facilities.

Further work from the Phillippines (Hallman, 1999) takes a more comprehensive approach to understanding healthcare choice, using a similar quantitative framework as my thesis does. The study measures how healthcare quality, price, and distance affect the utilization of outpatient services. The study finds that increasing distance to healthcare facility significantly reduces the demand for healthcare at a given facility, while user fees do not. It finds further that availability of oral rehydration therapy, proportion of doctors to staff, and availability of vaccines increase demand for public health facilities, whereas regular supply of intravenous treatment for diarrhea is associated with increased demand for private facilities. The contribution this paper makes is that it goes beyond simply looking at price and distance as relevant variables, and stratifies by public and private facility. However, the study is based in a rural environment where healthcare seeking patterns are quite different from urban environments, given the considerably greater choices within much shorter distances in the latter.

Furthermore, it does not draw distinctions between formal and informal facilities, a crucial one as my thesis describes in the findings section.

From the literature thus far synthesized, the results suggest that price and distance are important factors to consider as one would expect, although there is high variation in the degree to which price matters relative to distance. This immediately shows that one cannot make broad generalizations about the effect of price and distance and their effect sizes, and that context matters. Furthermore, the studies provide little insight into how individuals weigh distance, price and in relation to other factors (such as years in operation, waiting time etc.)

3.2b: Qualitative Literature:

The broader qualitative literature on healthcare choice in developing countries is comprehensively synthesized by Kroeger in his important article, *Anthropological and socio-medical health healthcare research in developing countries,* where he analyses the predisposing and enabling factors that influence the choice of provider.

Kroeger cites a number of studies where distance to provider, or "geographical accessibility" is cited as one of the major reasons that determine where individuals seek healthcare. Tying into the empirical literature, distance appears to be a significant factor, but many of these studies are conducted in rural environments where individuals have to travel long distances to seek healthcare. This thesis tests how much distance (in an urban locale) reduces the probability of seeking healthcare for relatively small increases in distance to facility (0.5km, 1 km). Measuring the distance coefficient has an important policy implication

which is, how many facilities should the government or other relevant actor build in a given area? How far are individuals willing to travel for lower prices?

A second factor is the healer-patient communication. According to the literature, cultural and contextual factors determine the extent to which patients value less or more communication with the healer. In the Ivory Coast for instance, patients engaged in very little conversation during visits and did not seem encouraged to ask questions. (Lasker et al, 1981). In a study conducted in rural Thailand, there was a general feeling of distrust towards practitioners of Western medicine. This deterred individuals from seeking healthcare at formal facilities. (Shuval, 1981) Several other studies find that there are deep communication gaps between patients and healthcare providers, and that individuals often turned to informal providers or local healers because of the "shared knowledge and assumptions". (Creyghton, 1977) For the purposes of my study, in which individuals have a wide choice set of formal and informal providers, it becomes extremely important to qualitatively and quantitatively understand how individuals perceive the doctor-patient relationship and the cultural and contextual factors that are pertinent to healthcare-seeking in GSC. Measuring the value individuals place on say, gender segregation or how they describe the attributes of provider that they value adds much to the existing quantitative and qualitative literature by grounding it in a particular urban context within Pakistan.

The existing qualitative literature also sheds light on the importance of a patient's perceived quality of healthcare. Kroeger cites a number of studies but one that is particularly relevant to this thesis is from Guatemala which showed

that the utilization of health posts was low due to low perceived quality. The study concludes that "improving levels of utilization seems to depend on improving the quality of services delivered rather than on building more health facilities of overcoming supposed cultural barriers". (Kroeger, 1983) The more recent literature on quality by Das et al (2016) suggests that price is strongly correlated with doctor-patient interactions and that doctors who perform more tasks are rewarded by higher prices.

A final idea that emerges from the qualitative literature, which presents a novel way to understand health-healthcare seeking in low and middle income countries such as Pakistan is to understand role of social capital of individuals in the community. In a paper titled: *A review of health seeking behavior: problems and prospects,* the author writes very perceptively that

> "By locating our understanding of health seeking behavior within this framework already we begin to see that the over-riding emphasis on the individual has been misplaced. It would be more rewarding to explore the inter-relationships of individuals within containing social systems, cultural norms and system constraints, and understand resulting behavior as a product of these inter-relations rather than something intrinsic to the individual" (MacKian, 2003)

This literature tends to emphasize that healthcare decisions are not just about the individual who is seeking healthcare but also involves social capital. Social capital here can refer to two distinct things. The first is the social capital that a provider builds up over time (i.e. trust) and the second is the social capital of an individual's

visitation to a particular healthcare provider as "viewed" by other community members. One of the key questions asked in the qualitative survey was whether other community members (such as neighbors) have any role in determining where a particular individual seeks healthcare. While one of the responses was that healthcare was a purely individual or family decision made by the dominant male member in the home, the findings on gender separation (while entering and/or in clinics) is suggestive of social capital's central importance. The fact that male members were so concerned about where their wives went to seek healthcare, how sensitive the doctor was to gender related issues, and most importantly, the distance to the clinic and the partition of the clinic, suggests that men are very concerned about how their women are viewed in public. I will return to this in the findings section.

3.3 Healthcare choice in Pakistan:

The study of healthcare choice in the context of Pakistan has been growing, although the mode of research has largely been semi-structured interviews. For instance, a study by Shaikh and Hatcher (2008) in the North-West Frontier Province in Pakistan suggests that several doctors are consulted for any given episode of illness. Features that influence choice are the availability of a female provider, fees, and the distance to a health facility. The authors finally argue that, "countries health-seeking behaviors have often been associated with physical, socioeconomic, cultural, and political determinants". While studies of this sort give us some sense of the picture of healthcare seeking, such as the importance of gender, they don't measure any of these factors quantitatively or provide us with

specific insights regarding such these behaviors vary across types of provider or the extent to which price matters. For policy makers, it is not enough to know that price and distance matter, for instance, but their relative effect.

In a broad literature review relating to health-seeking behavior in Pakistan (Shaikh and Hatcher. 2004), a number of themes pertaining to healthcare choice emerge. Accessibility, or distance to facility emerges as one of the major barriers to seeking healthcare. Shaikh et al write that the "effect of distance on service use becomes stronger when combined with the death of transportation and poor roads". Similar to the broader qualitative literature, several studies cited in this literature review show that confidence in the health provider plays an important role in the choice of healthcare provider. (Sadiq et al, 2002) Other studies suggest that doctor-patient communication and differences in cultural and language gaps also affect the choice of provider (Aga Khan University, 2003).

Some of the latest work on choice of institution in Pakistan comes from the field of education, where Das et al (2013) use a logit model to evaluate the willingness of parents to pay for different school attributes. The paper measures how much parents are willing to pay for say, an extra kilometer of reduced distance to the school, a school with a blackboard etc. This thesis is similar to Das' paper in its use of a discrete choice model, however the latter develops a structural demand model and uses an instrumental variable strategy to address potential endogeneity concerns when measuring the effect of price on choice of provider. My thesis paves the way for more sophisticated quantitative studies on healthcare provider choice.

Chapter 4
Data Sources and Limitations

For my analysis I use three major sources of primary data. The overall data-collection was done over two time periods: June-September 2015, where the household survey and qualitative survey were conducted, and December 2015 – January 2016 where the provider characteristics survey was conducted. (The household and qualitative survey are included in Appendix A and B respectively) Funding for this work was received from the Stanford Public Policy Department and the Center for Democracy, Development and the Rule of Law. IRB approval for the household survey and the qualitative research was received through Interactive Research and Development, a local research group in Pakistan that gives IRB approval for many internationally and locally funded studies.

4.1 Household Survey:

The first, and primary source of data is a large household survey of 718 households, randomly selected from the 5 blocks that comprise the community. Seventy percent of the respondents are male, and thirty percent are female. This sampling strategy was determined based on the fact that GSC is a highly conservative community, and men were assumed to have greater knowledge about general household and health expenses given the patriarchal structure of the family in Pashtun families. The survey is a more detailed version of World Health Survey (conducted in 2003 within Pakistan) and has sections on household characteristics (e.g. income and wealth), demographic information, health knowledge, and healthcare choices. The healthcare choice section asks survey

respondents to recall all the health providers they visited in the previous month. For each visit, respondents are asked additional questions such as the time taken to travel to the provider, the condition that healthcare was sought for, waiting time, and the price paid for the entire visit. The respondent is also asked to answer the same set of questions for his/her spouse, children, and other family members. Through this exercise, we not only acquired household level choice data but also data that is further disaggregated at the level of individual household members. The final section of the survey asks respondents to rank their preferences for various healthcare attributes such as ethnicity and time spent in the community on a scale of 1-3. Piloting of the survey took place in August 2015. Following piloting, formal data collection took place in September 2015, using a team of trained surveyors with experience conducting surveys in locales similar to GSC.

The study has a number of limitations. Firstly, since one member of the household is speaking on behalf of all family members, the number of choices for members other than the respondent may be an under-estimate. The second limitation is that individuals appear to have under-reported how often they visited the local NGO clinic, SINA (potentially because they were embarrassed to admit that they sought healthcare at a welfare facility) The reason why the number of visits to SINA in the last month, 103, arises from our extrapolated figure of 1200 for the last month for the entire community. Clinic data shows that clinic has between 3000 and 3500 visits a month. The discrepancy in figures potentially helps shed light on how individuals view healthcare by welfare or non-profit institutions. The third limitation is that we only have data for when individuals sought healthcare. In other words, we do not know about when individuals *fell*

sick but decided *not* to seek healthcare at a facility. While the some of the qualitative transcripts shed some light on this, there is no quantitative estimate of self-care in the survey.

4.2 Qualitative Survey:

The second source of data is a semi-structured qualitative survey, conducted in June and July 2015 with male and female members of the community. The major purpose of the qualitative survey was to get a richer sense of how individuals made the decision to seek healthcare for different members of the family and what factors they considered at the time of healthcare-seeking. Questions focused on the respondents' challenges and barriers faced in seeking healthcare, and experiences within the healthcare system. Another key purpose of the survey was to gauge how individuals viewed and perceived the informal health sector relative to the NGO, private formal sector, and government sector. Our qualitative survey, conducted prior to the household survey, was used to inform the other two surveys. The qualitative findings will be used to help interpret the results from the household survey as well as to delineate key unobservable factors that influence the choice of healthcare provider. One limitation of the qualitative survey is that it did not cover the entire sample area of the household survey. This is because of the significantly smaller sample size. While individuals were surveyed from each of the 5 blocks in the community (map provided in appendix) one cannot map the qualitative survey directly onto the household survey, both in terms of sample size and area covered.

4.3 Provider Characteristics Survey:

This survey was conducted in December-January 2015-16. This part of the data collection exercise was the most challenging given that providers and that informal providers are deeply sensitive about their illegal status and often do not have names on their clinics. This because raids are frequently conducted, resulting in providers have to "disappear" for a few months. Furthermore, in the qualitative work that was conducted, individual respondents frequently said we should call to the police to raid the informal healthcare providers in the community. For these reasons, data collection has to be approached with contextual awareness and sensitivity. Two individuals who have lived in the community for several years and are involved in the health sector (one is a community health workers and the other a local polio administrator) were selected to acquire information regarding the providers, which included location coordinates, whether the provider had an MBBS, years spent in the community, whether the provider was on the main road etc. (The survey is included in appendix A) These characteristics, amongst others, will be used as independent variables in the estimating equation, in addition to the variables mean price for different services, distance from each house, and mean waiting time.

There are two major limitations with this survey. The first is that a decision was made to collect data on healthcare providers who had three or more visits (median number of visits) in the last month given the costs of collecting data on every marginal provider. Cost here refers not to monetary cost but other costs in terms of security and reputation of surveyors whose motivations may be

questioned by community members. 69 out of the 132 providers had three or more visits in the last month and account for 96% of all choices. The second limitation is the possibility of error in some of the characteristics. The most important source of error would be whether a doctor is MBBS or not. The two designated surveyors have a deep knowledge about the community (who has qualified medical degrees etc.) but some error may have been made for providers whose degree status was highly ambiguous. However, these errors, if any, were random errors rather than systematic and should not affect the findings of this work.

Chapter 5
Descriptive Statistics

This section lists a variety of descriptive statistics about the providers and households to contextualize the findings:

5.1 Provider Summary Statistics

As outlined earlier in the section on data sources and limitations, 130 unique providers emerged out of the household survey. However, owing to logistical and security concerns working in a community where provider insecurity regarding their informal status is paramount, we decided to only count providers who had 3 or more visits in the last month – the median number of visits for any given provider. This left us with 69 providers. Together, these 69 providers covered around 96% of total visits in the sample-set. Finally, not including providers with spurious distance coordinates left us with 64 providers (36 informal and 28 formal). The mean price of a formal sector provider was Rs. 447, or around $4.2 dollars, and the mean price of a formal sector facility was Rs. 1102 or $10.5. Both the mean distance and the mean waiting time were approximately double for the formal sector providers, which speaks to the inconvenience that individuals experience when describing healthcare seeking at formal sector facilities (elaborated on in the chapter on findings) Another key piece of descriptive information is how long providers have been practicing for. Informal sector providers, on average, have been practicing in the community for 11 years relative to formal sector providers, who on average have been practicing for 25 years. One

reason for this is that public sector hospitals are included in the formal sector data-set, some hospitals have been operating in Karachi for several decades. The following table, 6.1 summarizes the key statistics for formal and informal healthcare providers:

Table 6.1 (Provider Summary Statistics)

VARIABLES	(1) Informal Facilities	(2) Formal Facilities
Number of Providers	36	28
Mean Price (Rupees)	447 ()	1155
Median Price (Rupees)	345	671
Mean Waiting Time (Minutes)	32	62
Average Distance from Household (Km)	0.34	1.4
Mean Number of Years Operating	11	25
Median Number of Years Operating	10	14
On Main Road	78%	-
Separation_male_female	97.2%	-

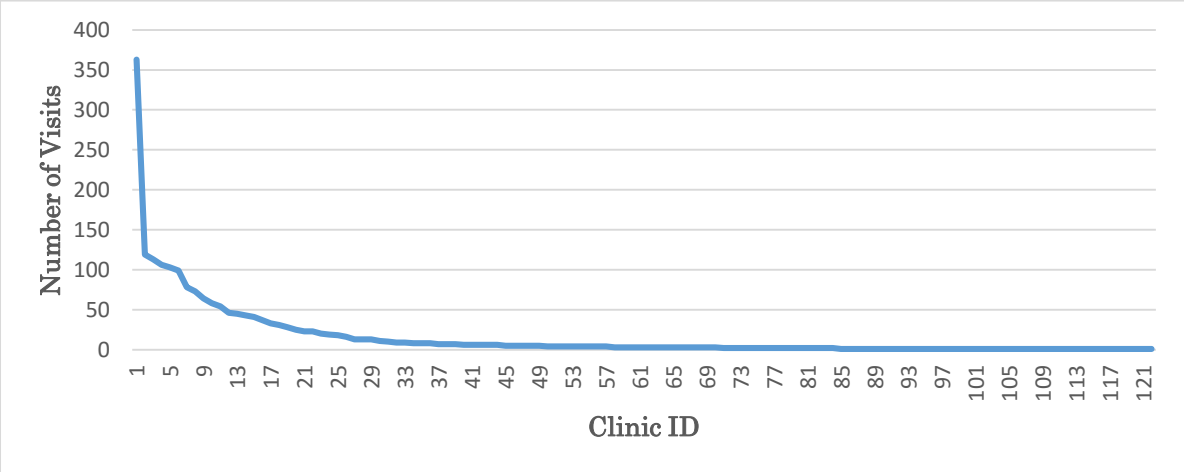
A useful summary statistic regarding the healthcare provider market in GSC, is that the 10 ten providers capture nearly 60% of all the patient visits. The highest market share of any provider is 18% and he has been in the community for over two decades. Several of the qualitative interview transcripts focused on

descriptions of this provider. This suggests that barring a few important providers, the vast majority of providers capture a very small percentage of the market, which may help us understand why market is better described as a collection of smaller, local markets. Table 6.2 displays the market share of the top 5 providers and figure 6.1 shows the distribution of provider visits/provider in the last month.

Table 6.2 (Visits/Provider)

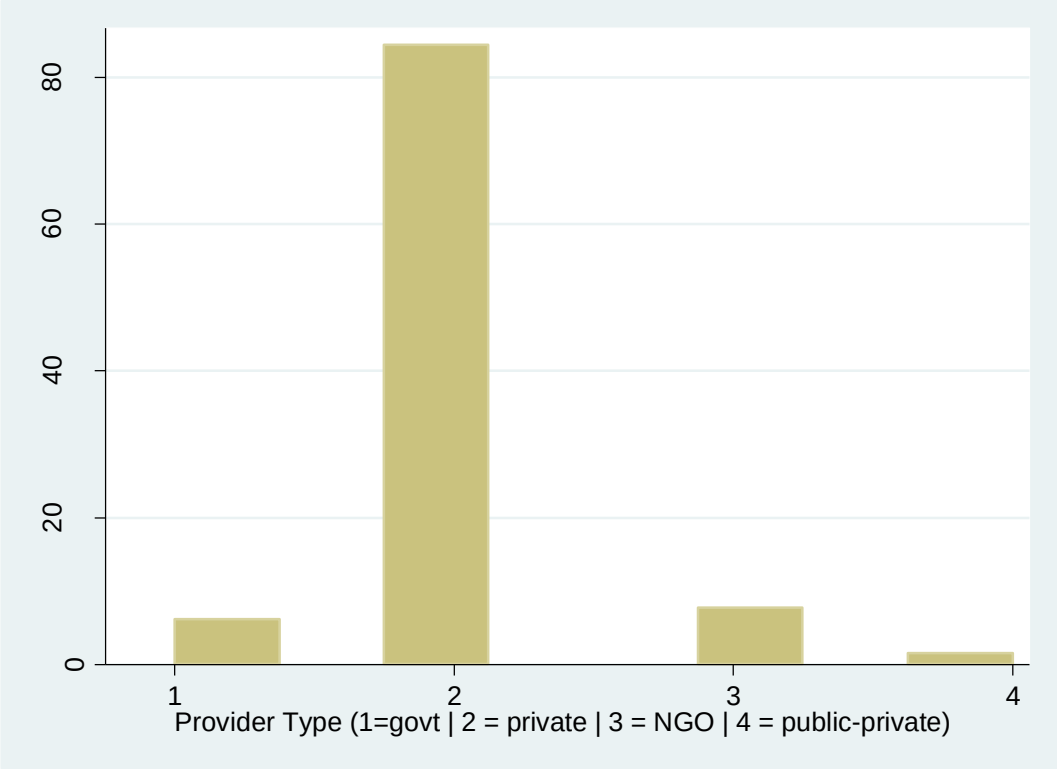
Provider ID	Market Share (Visits)	Market Share (%)
1	359	18
2	119	6
3	113	5.6
4	106	5.3
5	103	5.1

Figure 6.1 (Visits/Provider)



The following graph shows the composition of the 64 providers in the data-set:

Figure 6.2 (Provider Types)



More than 80% of the providers in the choice-set were private-for profit providers, which include formal and informal providers. Approximately 7% of providers were government, or public sector.

5.2 Household Summary Statistics:

The household summary statistics were discussed earlier, in chapter 2, therefore this section will only touch upon them briefly and illustrate with figures salient features of the household demographics. Average income in the community is Rs. 20, 016 (USD 191.26) a month with a distinct chi-square distribution (distribution of income is shown in figure 6.2) and the average health expenditure

is Rs. 1667 (USD 15.9). The average number of children per household is 4 with a family size of 7. For reference, table 6.3 is shown below:

Figure 6.2 (Distribution of Income)

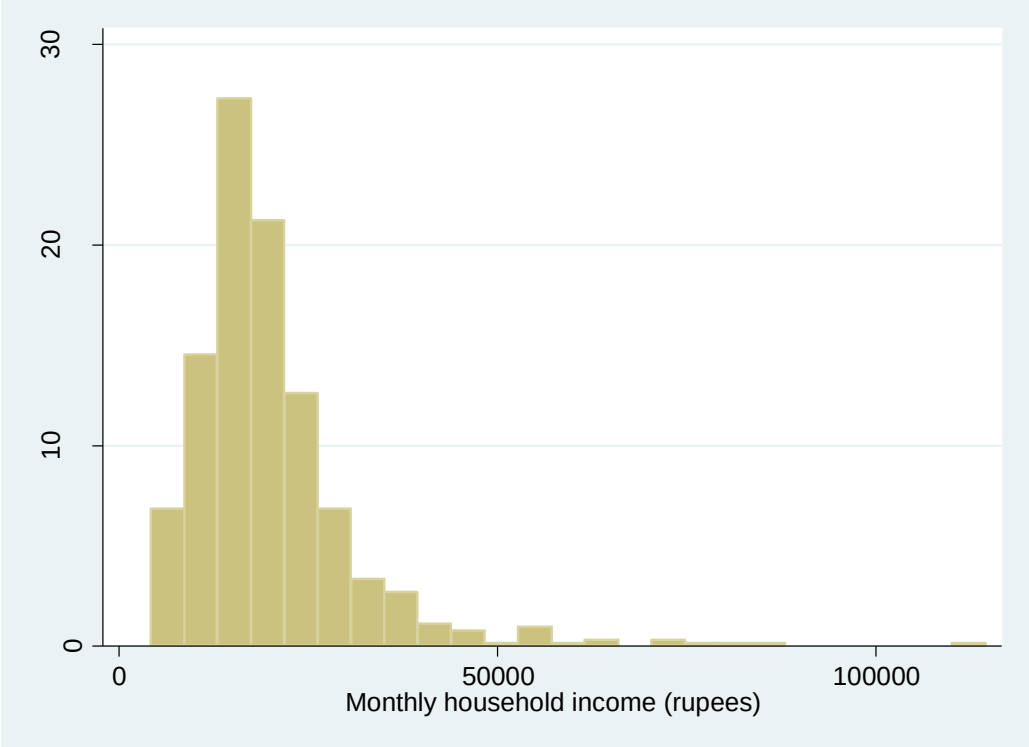


Table 2.1 (Household Summary Statistics)

Variable	Outcome
Mean Income/Month (Rupees)	20,016
Mean Health Expenditure/Month (Rupees)	1667
Mean Number of Children per Family	4
Mean Family Size	7
Number of Households in Survey	718
Number of Households in Dataset	626

Total Number of Households in Community	8600
Healthcare Choices/Month	3

5.3 Types of healthcare seekers:

One of the descriptive findings of this work has been the different types of healthcare seekers in GSC.. The pathway literature describes the complex journeys that patients make from the time that they fall sick to the time that they visited a health facility. For instance, Moses et al (1994) finds that there are individuals who move between providers, or "wander" rather than receive healthcare at a single provider. Rahman (2000) finds that individuals visit different facilities for different needs. Using the qualitative data, I group individuals into three distinct groups of healthcare-seekers, and then look at the quantitative data to see which kinds of individuals are wedded solely to one provider, versus those that have more than one provider in their choice-set.

The preliminary qualitative findings suggest that there are three broad groups of healthcare seekers in GSC. Each healthcare seeker is aiming to maximize utility in a different. The first type of healthcare seeker has a family doctor, who he or she consults for all illnesses below a certain threshold x after which they decide to seek healthcare at a large public or private hospital. The family doctor is someone who has built a high degree of trust either through their approach to healthcare-giving or duration they have been practicing for in the

community. The second type of healthcare seeker decides to seek healthcare based on some decision rule, whereby different providers are consulted for different illnesses. In other words, individuals seem to be making a conscious choice based on condition type to seek healthcare at different instituions or providers, perceiving quality of healthcare for different illnesses to vary across providers. The third type of healthcare seeker is someone who goes to several providers upon falling sick and recognizes that all are of low quality. This healthcare seeker tries to maximize his or her chances of getting better by visiting enough providers such that they get the right treatment. The interview transcripts demonstrate that the majority of community members appear to belong to the first category. Selections from the interview transcripts are shown below to highlight the thought-process of the different types of healthcare-seekers:

Type 1: Family Doctor Type

> Interviewer: Do people talk around here about different providers? Do you listen to them?
>
> Respondent: No, we don't listen to anyone. We go wherever we've been going from the start. Even if someone says something to us we'll just take it in one ear and out the other.

Type 2: Decision rule based on illness type

> Interviewer: So who do you go to first?
>
> Respondent: If we have a cough or a cold then there is this Dr Rizwana here we go to her and it is okay. And if we are sicker then there is Dr Imtiaz.

Type 3: Searchers

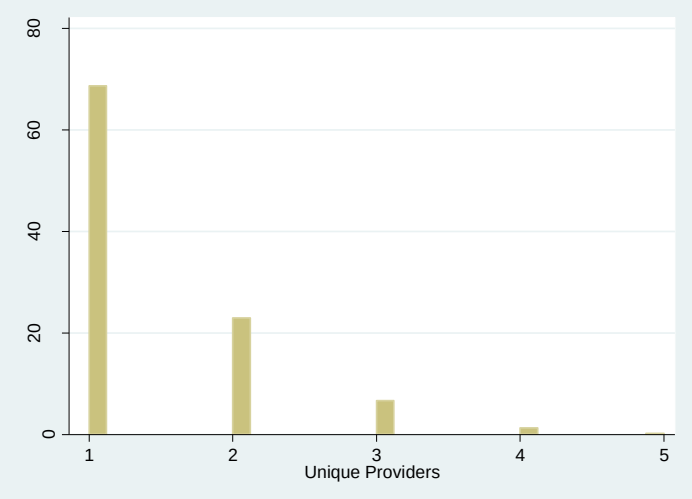
> Interviewer: So about health, how do you obtain information about health like what to do when someone gets sick, where to go etc.?

Respondent: You know what? We know the doctors in the colony. We'll go somewhere, if the patient doesn't feel better, we'll go somewhere else.

These three broad categories of healthcare-seekers are in no way deterministic. Individuals who are primarily type 1 will at times visit other facilities if their illness does not subside. Furthermore, if no informal sector doctor is able to deal with a particularly complicated condition, then such individuals will make use of formal healthcare, as many of the qualitative transcripts have alluded to. One many imagine that it would take a higher threshold for a type 1 individual to seek healthcare at an alternate facility relative to a type 3 individual.

The graph below represents how many unique providers households visited in the last month. It shows that around 70% of household went to just one unique provider, around 20% to two unique providers, and around 5% to three unique providers. This data is consistent with the qualitative data, which suggests that the majority of households seek healthcare at a family doctor.

Unique Providers/Household



Chapter 6
Quantitative Model and Methodology

6.1 Conditional Logit Model:

For my quantitative analysis, I use a conditional logit choice model to estimate the effect of different provider and household characteristics (and their interactions) to estimate the healthcare choices of individuals in GSC. The conditional logit model extends on the framework developed in the field of industrial organization by Daniel McFadden (McFadden et al, 1971). Since much of my subsequent analysis in the paper will be stratifying the results by formal and informal healthcare facility, the following figure (figure 5.1) is a useful way of visualizing the choice to seek healthcare:

Figure 5.1:

Dependent Variable:

The dependent variable in conditional logit models is the binary variable "clinic chosen". The data-set is structured in a manner that when a given individual is making a choice, he or she has the option of choosing from the entire set of clinics or hospitals. Given that we only collect data on 69 of the clinics in the data-set, as explained earlier, each time an individual makes a choice we assume that they could have gone to any of the 69, and going not only maximized their utility from amongst all the options, it also maximized their utility relative to not going at all. The data is organized in the following way:

ID Number	Clinic ID	Chosen
1	1	0
1	2	0
1	3	0
1	4	1
1	5	0
1	6	0

Independent Variables:

I run two separate conditional logit models, a base model and an expanded model. The independent variables in the base model are price, distance, mean waiting time, and the years the provider has been operational for. I run the model for all providers, informal providers only, and formal providers only, to be able to

make comparisons between the effects sizes of different variables for different provider types.

The second model includes two additional variables: gender segregation of clinics and whether a clinic is on the main road. Such variables made little sense in the case of several formal facilities (hospitals are not gender segregated and they are all on the main road). Therefore these variables are only included in the model with informal providers.

The mean_price variable is measured in rupees and price of a provider across all the patient visits in the sample and disease states. The price for each visit included service cost + tests + medicines. Distance refers to the distance in kilometers between the household and the clinic. Mean waiting time similarly is the average waiting time (of a patient) for a given provider across all the visits, measured in minutes. Clinic years in practice refers to how many years the provider has been practicing for. For the clinic regressions, the variable separation_male_female refers to whether a given provider has a partition in the clinic and or a separate entrance which allows men and women to enter sit separately without being able to see one another.

Limitations of Model:

The conditional logit model I use has a number of important limitations. The first is a crucial assumption that for each provider an individual went to, they (the individual) could have gone to either one of the other 68 providers. This assumes that individuals have knowledge about all 69 providers, which is unlikely to be the case. Since I do not know the exact choice set for each individual, and

may exclude key choices by defining it too narrowly by location or neighborhood, I assume that in theory individuals could go to any of the providers in the choice-set. The second key limitation has to do with the independent variable price. The qualitative research suggests that providers have different (payment) arrangements with different people, and they may charge differentially based on the kind of illness they are treating. However, the model simplifies this and takes the mean price of a provider across all visits, since we do not know what a given provider would have charged someone else in the choice set. A third limitation is the endogeneity of price, since price is likely to be strongly associated with un-observed interactions that are taking place in the clinic and the quality of healthcare, for which I do not have quantitative measures of either one of these estimates. Recognizing the potential endogeneity of price, I do not make any causal claims in the analysis and rather describe the key associations between price and the probability that a given provider is chosen. The final limitation is that the model doesn't allow for tradeoffs being made between the informal and formal healthcare sector, which would be possible in a nested-logit model. Future studies in this area should seek to deploy nested logit models to understand healthcare provider choice in low and middle income countries.

Random Utility Maximization:

Discrete choice models are built on the concept of random utility maximization. A particular choice is chosen if it maximizes utility relative to other choices that could have been chosen.

$\boldsymbol{Prob}\ (\boldsymbol{U_{ij}} > \boldsymbol{U_{ik}})$ **For all other k ≠ j**

The above equation mathematically demonstrates that individual i will have a higher probability of picking clinic *j* relative to clinic *k* if the utility derived from clinic j exceeds the utility derived from clinic *k.*

The utility of a given clinic is shown as follows:

$$\boldsymbol{U_{ij} = z_{ij}\ \theta + \varepsilon_{ij}}$$

$\boldsymbol{U_{ij}}$ refers to the utility of an individual when they decide to seek healthcare at a given facility, z_{ij} refers to the vector of the observed attributes of the clinic *j* for an individual *i* and θ is the vector of the coefficients of all the clinic attributes. ε_{ij}- is the effect of the unobserved facility level variables that affect the utility an individual gains when choosing a given health provider.

Estimating Equation:

The expanded forms of $\boldsymbol{U_{ij} = z_{ij}\ \theta + \varepsilon_{ij}}$ for both the models I run are as follows:

$$U_{ij} = \alpha + \boldsymbol{\beta_1} Price + \boldsymbol{\beta_2}\, Distance + \boldsymbol{\beta_3}\, Mean\_waiting\_time + \boldsymbol{\beta_4}\, Years\_in\_operation + \varepsilon_{ij},$$

$$U_{ij} = \alpha + \boldsymbol{\beta_1} Price + \boldsymbol{\beta_2}\, Distance + \boldsymbol{\beta_3}\, Mean\_waiting\_time + \boldsymbol{\beta_4}\, Years\_in\_operation + \boldsymbol{\beta_5}\, Gender\ Segregation + \boldsymbol{\beta_6}\, On\_main\_road + \varepsilon_{ij},$$

The two equations above measure the utility of an individual *i* from each of the clinics that he or she can visit. The following equation calculates the probability that a given clinic will be visited:

$$Prob\ (Y_i = J) = \frac{exp\ (U_{ij})}{\sum_{i=1}^{j} exp\ (U_{ij})}$$

Marginal Effects

$\frac{\partial P_{ij}}{\partial X_j} = [P_{ij}(1 - P_{ij})]\beta$, where P_{ij} is the probability of a given clinic being chosen and β is the coefficient on a provider level attribute of interest.

For the purposes of this thesis and its potential policy implications, I am interested in how unit changes in each one of the clinic attributes *X* affects the probability that healthcare will be sought at a given facility. To understand this, I use marginal effects analysis, in which I calculate the average marginal effect of changing the value of a given clinic attribute on the probability that healthcare will be sought at a given facility. The tables presented in the findings section will be expressing each of the relevant provider attributes in terms of marginal effects.

6.2 Qualitative Method

As noted earlier, the qualitative work was conducted before the household survey as a means of informing which independent variables ought to be included in the survey. For the purposes of interpreting the quantitative results, the qualitative data was grouped into themes of different provider attributes. For instance, gender was highlighted as a theme and the transcripts were analyzed to locate instances where issues pertaining to gender were brought up. Similarly, for attributes pertaining to the qualities of particular providers, transcripts were searched for descriptions of providers and their interactions with patients. While the qualitative work is largely used to interpret the quantitative estimates, the

rich findings allowed us to highlight unobserved attributes of providers that are not captured by the quantitative model.

Limitations:

One of the limitations of the qualitative analysis is that a formal coding methodology (such as multi-pass coding) was not used to analyze the transcripts. Such a coding scheme may have yielded more structured results and analysis. The reason why a formal coding methodology was not used for the qualitative analysis is that the qualitative work is largely a supplement to the quantitative results and as a way to interpret the findings. When the qualitative work was used to stand on its own, such as to identity the unobservable qualities of the providers that patients valued, I found that carefully analyzing the interviews and grouping the results into sub-themes proved to be a useful way to capture the major patterns and insights about health-healthcare seeking behavior in GSC.

Chapter 7
Findings

7.1 Marginal Effects:

In this section, I describe the major findings from the qualitative and quantitative research. The tables shown below represent average marginal effects for unit changes in different variables in the choice model **(For mean_price, the change represents a Rs. 100 increment, for distance, 1 km increment, for mean_waiting time a 10 minute increment, and years_in_operation a 1 year increment)** For all variables discussed, I use the results from the base model since comparisons can be made between formal and informal providers (several formal providers do not have data for separation_male_female and there is no variation in on_main_road). When discussing the variables gender_segregation and on_main_road I use the expanded model, which only applies to the informal facilities.

Table 7.1 (Mean Values)

VARIABLES	(1) Formal + Informal Facilities	(2) Formal Facilities	(3) Informal Facilities
mean_price (rupees)	757	1155	447
Distance (km)	0.7	1.4	0.34
mean_waiting_time (minutes)	44	62	32
years_in_operation	17	25	11

Table 7.2 (Base Model)

VARIABLES	(1) Formal + Informal Facilities	(2) Formal Facilities	(3) Informal Facilities
mean_price	-0.0100***	-0.0030***	-0.0270***
	(0.000)	(0.000)	(0.000)
distance	-0.1287***	-0.0867***	-0.3288***
	(0.007)	(0.007)	(0.020)
mean_waiting_time	0.0300***	0.0270***	0.0030
	(0.000)	(0.000)	(0.000)
years_in_operation	0.0058***	0.0018***	0.0023***
	(0.000)	(0.001)	(0.000)
Observations	112,789	14,640	44,460

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 7.3 (Expanded Model)

VARIABLES	(1) Informal Facilities
mean_price	-0.0500***
	(0.000)
distance	-0.5630***
	(0.031)
mean_waiting_time	-0.0020
	(0.000)
years_in_operation	0.0030***
	(0.001)
on_main_road	0.1125***
	(0.017)
separation_male_female	0.3190***
	(0.076)
Observations	43,120

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

7.1a Price

For the regression with formal and informal facilities combined, on average, a Rs. 100 increase in price is associated with 1 percentage point decrease in the probability that a given provider would be visited. For informal facilities, a Rs. 100 increase in price is associated with a 2.7 percentage point decrease in probability of going to a health provider on average. For formal sector providers, a 100-rupee increase in price is associated with a 0.3 percentage point decrease in the probability that the provider will be visited. The marginal effect of price on the probability that healthcare is sought at a formal facility is much lower than the marginal effect for an informal sector provider. One interpretation of the difference between the two is that when individuals decide to seek healthcare at a formal sector facility, they have already decided (or begrudgingly accepted) it is

serious enough to pay a mean price of Rs. 1000. If the condition could have been easily treated by an informal provider, they would not have gone to seek healthcare a formal provider. The qualitative work suggests that healthcare at formal sector instituions is largely viewed as an inconvenience and individuals mostly only seek healthcare at such institutions when other options have failed. If an individual considers the case important enough to seek healthcare at a formal sector provider, then one would expect price to not be strongly associated with the probability that healthcare will be sought at such a provider.

Although the marginal effect of price on probability healthcare will be sought at an informal facility is higher than for formal facilities, the probability of going to a given facility in general appears to be only modestly sensitive to price. The relatively low effects of price are consistent with some of the earlier literature on the effect of price on the demand for healthcare at a given facility. However, since many of the existing studies were conducted in rural environments, where the choice-set is more limited, one may have expected the findings from an urban setting to be significantly different. One way to interpret the marginal effects results is that distance is largely influencing choice. A plausible interpretation of the coefficients arises from Das' et al (2016) recent work, which suggests that price is reflective of quality, or more broadly, the nature of interactions taking place inside the clinic setting. For instance, doctors that ask more questions in their interactions with patients charge higher prices. If doctors charge differentially based on what the community perceives to be their value add, one would expect that there is greater variation in prices for doctors who have been in the community for a longer period of time, since they have been able to not only

establish their value add but accordingly set a price that reflects their reputation and perceived quality in the community.

For providers who have been practicing more than 10 years, the standard deviation is Rs. 478 for a mean price of Rs. 465. For providers who have been practicing for less than 10 years, the standard deviation is Rs. 288 for a mean price of Rs. 469. In other words, there is much greater variation in price for providers who have practicing for longer, suggesting that over time, providers are able to establish their "value-add" (unique skill-sets or personality traits as perceived by patients and/or respected members of the community) to community members and charge accordingly.

The following margin plots (figure 7.2 and 7.2) show the effect of an increase in price on the probability that a given formal or informal provider will be visited. For informal facilities, we find that at price 0, the probability that a given provider will be visited is approximately 25 percent. This probability falls to 10% when the price increases by Rs. 500. Immediately, this suggests that price matters but not as much as one may expect. Naturally, for formal providers, the probability that a given provider will be visited at price 0 should be higher, given that formal healthcare provision is relatively scarcer. We see that at price 0, the probability that a given provider will be visited is 51 percent, and this falls to only 47 percent when price is increased to Rs. 1000.

Figure 7.1

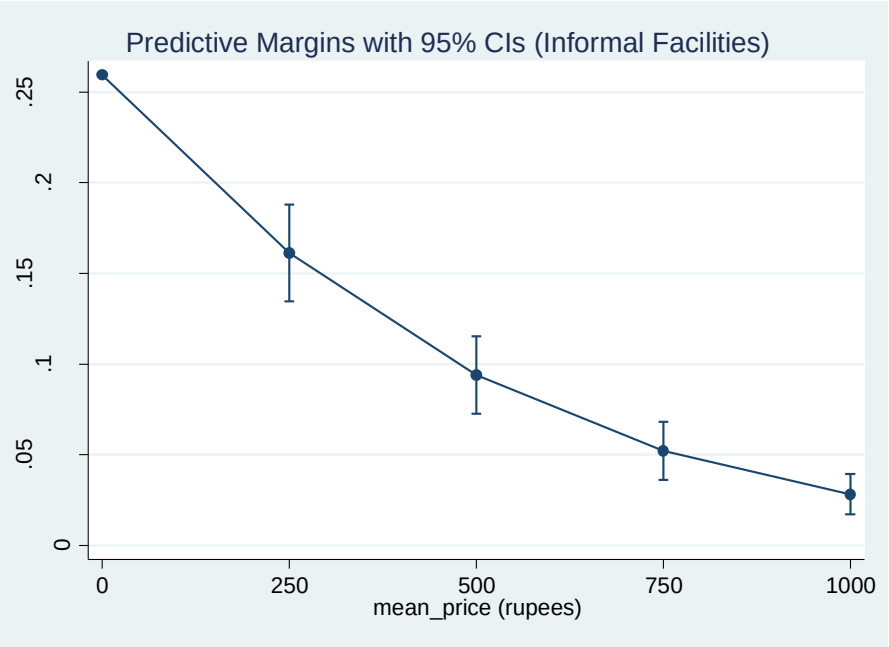
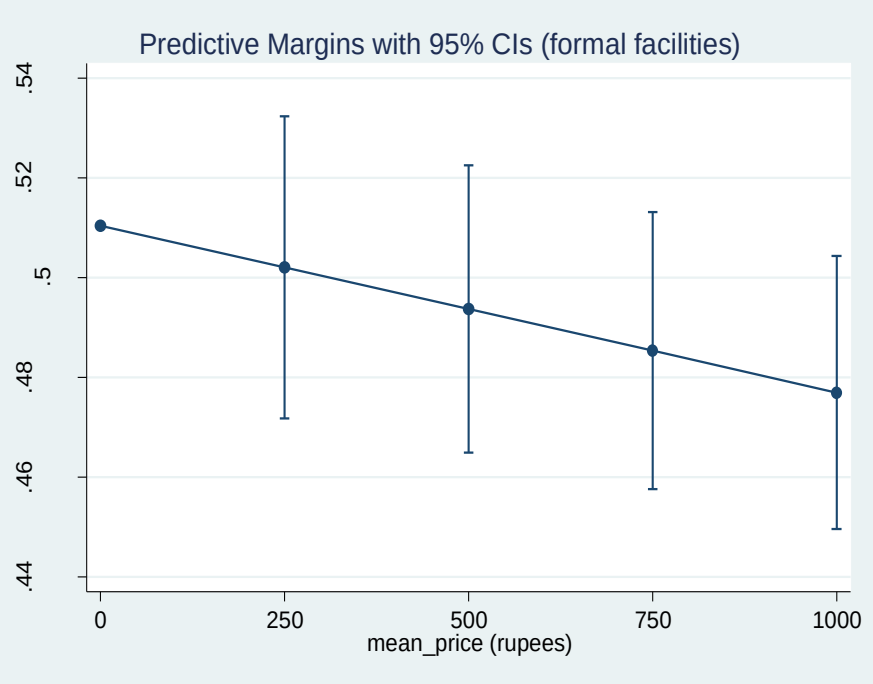


Fig. 7.2



7.1b: Qualitative findings on price

During the course of the qualitative interviews, respondents were asked about why they visit certain providers over others, certain individuals replied that prices affected their decision. However, the respondents often referred to the price of service as opposed to the total price paid (which includes medicines, injections and tests), which suggests that individuals may be sensitive to sticker price but not total price, though this remains to be validated through further empirical research. For instance:

Respondent: He is lame. He is more commonly known as the good doctor but we call him the langra doctor. (Laughs). We have to go around 2 or 3 times for the treatment to work. Nothing happens if you go one time. But it is not that big of a hassle because he lives close by and he only charges Rs 50.

Some of the respondents did exhibit negative feelings towards providers who were too "transactional" in nature or who they believed treated them purely as customers (further discussed in the section on observable provider characteristics) A few of the transcripts mentioned the kindness providers showed to them by not charging them for a visit or by charging less. For instance:

Respondent: I went to doctor Nadeem. I told him about my dire situation regarding my finances and that my son is also too young to earn right now.

> He was asking for 300 rupees for the drip but then gave it for 250 rupees. He is very good.'

The qualitative findings suggest that price considerations are not trivial, however, what matters as much if not more than price charged, is how providers *come across* when charging patients. What is most striking about some of the transcripts is the overwhelming desire for immediate relief. Several of the interviews indicate the following theme:

> **Interviewer: How do you find out where you should go and why you should go etc.?**
>
> **Respondent:** Whoever is sitting at their clinic and wherever they are sitting we just go there. We don't see who is good and who is not good. We just need to get an injection put from them
>
> **I: What happened at the doctors?**
>
> R: The same as usual, they gave an injection for temporary relief.

This, along with the distance estimates in the next section, suggest that the immediate (or short term) demand for healthcare is relatively price inelastic, which likely allows providers to be able to consistently charge above marginal cost

7.2b Distance:

For the combined model, a 1km increase in distance is associated with a 13 percentage point decrease in the probability that healthcare will be sought at a given facility. For informal facilities, a 1 km increase in distance is associated with a 33 percentage point decrease in the probability of seeking healthcare at a given facility. For formal facilities, a 1km increase in distance is associated with a 9

percentage point decrease in the probability that healthcare will be sought at a given facility.

The following margin plots show the effect of an increase in distance on the probability that a given provider will be visited. At 0 distance, the probability that an individual will visit an informal provider is 35%. This drops to nearly 0 with an increase in distance of 1 km. For formal facilities, the probability that a given facility will be visited at distance 0 is approximately 64%. With a 5 km increase in distance, the probability drops to approximately 20%. While this suggest relatively high distance sensitivity, there is a stark difference in how distance sensitive individuals are when seeking healthcare at formal or informal facilities. The marginal effects for distance suggest that the healthcare market of GSC should be viewed as a collection of localized markets where providers exert some level of market control based on their geographical location. The margin plot for informal providers and formal providers are shown in figure 7.4 and figure 7.5 respectively.

Figure 7.4:

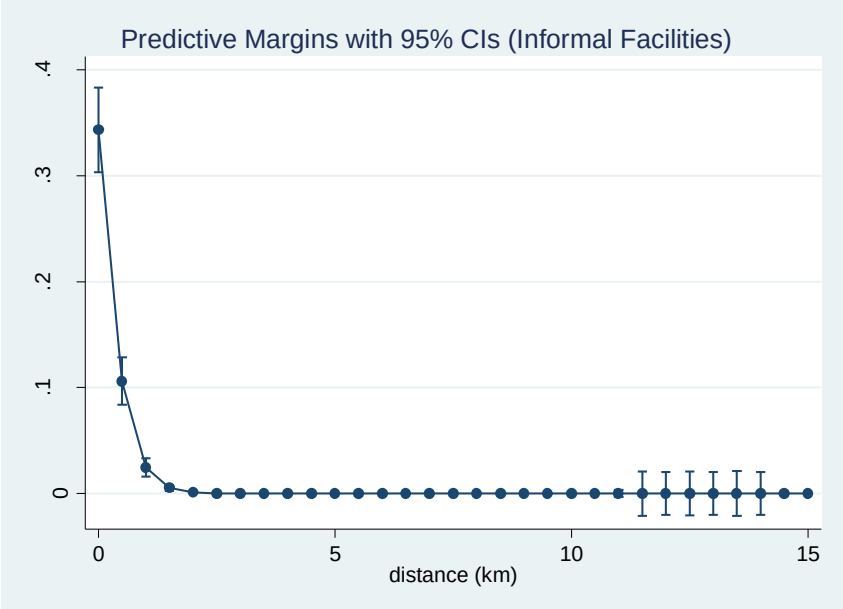
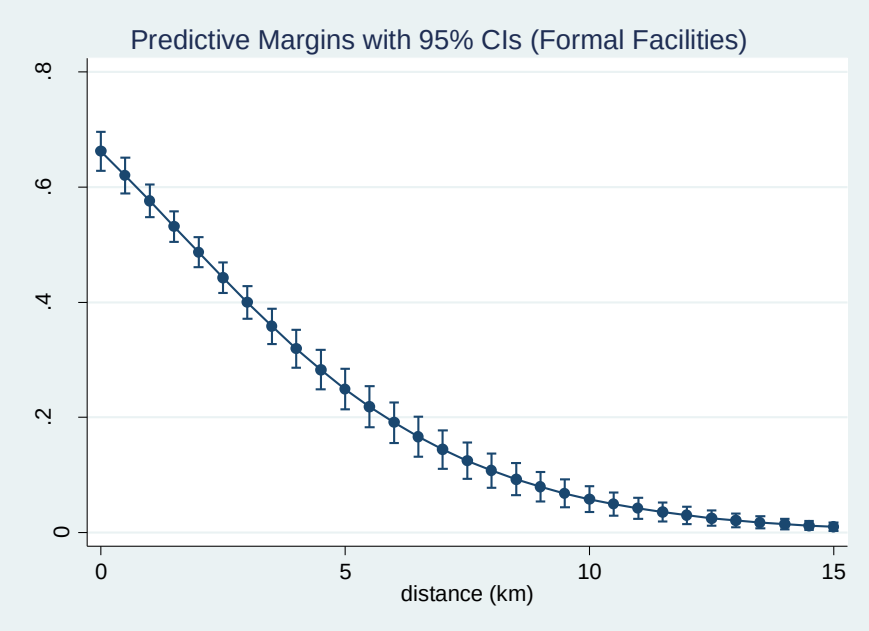


Figure 7.5



7.1c Qualitative findings on distance:

In general, we find that at least for informal facilities, a 1 kilometer increase in distance is significantly associated with the probability that healthcare will be sought at a given facility. This appears to be the case because individuals are, on average, travelling 340 meters to access a healthcare facility, which is a strikingly low distance and describes the density of informal healthcare providers in GSC. To supplement these results, one can draw upon transcripts from the qualitative interviews. The following quotes are used to demonstrate why people are more likely to visit proximate provider:

Interviewer: So let's talk about health. Where do you obtain health information such as about treatments and medicines and such?

Respondent: Well we have a doctor in our vicinity so we just go to him. I've been here 25 years so I've always only gone to him.

Interviewer: How long do you wait before going to the hospital when someone is sick?

Respondent: Whenever the kids have a cold or a flu or something I would take them the same day. I only go to local clinics in this vicinity. I primarily go to Posey. I go to Ziauddin for bigger problems only when I have to.

Interviewer: What's the best thing about the treatment you receive there?

Respondent: He's the nearest doctor. And he gives good medicine.

Interviewer: and uh do you go this doctor if you have any other problems? This one you were just talking about…

Respondent : (gesturing behind us) there's one there (gesturing behind himself) there's one back there (gesturing left) there's one at that back road, and then back by one shop there's one there, X doctor he's quite famous. But all of them are just like that.

Interviewer: so what do you think is the reason? Are the doctors better, are the medicines better or what?
Respondent: Well I don't know about that.
Interviewer: So your family doctor, how long has he been in the clinic?
Respondent: Well we've been seeing him for a long time, like we grew up in front of him.
Interviewer: So do you know him really well?
Respondent: Well he is from my part... Like I am from one village and he is from another village…
Interviewer: So do you people know each other really well?
Respondent: (Bursts in) no we don't know each other really well. We just get treatment from him and its fine.

I: After how many days did you go to the doctor?

R: I fall sick very suddenly so whatever time it is and whatever doctor is sitting in his clinic at that time, I go then and there.

I: Immediately?

R: Yes, immediately. If it's such a time that there is no doctor sitting anywhere, then for temporary relief I take medicine for a head ache and then wait till some doctor comes and sits at his clinic and then I go there as soon as I can. I just fall sick very suddenly.

The quotes lend some insight into why distance may matter. Beyond the simple convenience of having a clinic opposite one's home, certain providers who have lived alongside a household for several years also garner a particular trust. In future sections we will see, proximate distance also allows women to go to the clinic, get a token, return later for their appointment, such that they avoid being out of the home for too long (which may raise the ire of family and/or community members.) This is very understandable consideration given the cultural milieu of GSC, as the section on gender considerations will demonstrate.

Another aspect that is striking from the qualitative transcripts is the immediacy of healthcare-seeking. Many interview transcripts demonstrated that individuals seek healthcare immediately upon a member of the family falling unwell. This suggests how distance sensitive individuals are and why perhaps, so many providers have entered over the time to capture local geographical areas.

Having said the above, it must be noted that the distance estimates may in fact simply be reflecting the over-supply of providers as opposed to the latent

distance sensitivity of individuals. If community members in general perceive the informal healthcare providers to be of low quality. As a result, they simply pick the closest provider to their home.

7.1d Years in Operation:

Regarding provider years in practice, one would have expected a large positive marginal effect, given that some of the qualitative interviews stressed the importance of provider trust, which is built up over the years while each provider establishes his or her place in the community. For example:

> **Respondent:** There is bhoji doctor. He has been here before I was even born. He is pretty old but he is still here. He has a clinic here. First his wife also used to work with him. Now she does not. My parents go to him. But I don't go to him. Actually that doctor has known me for a very long time and he also knows my parents.
>
> ---
>
> **Interviewer: How long have you been going to Taj doctor for?**
> I've been married for ten years or eleven and ever since then I have been going to him only.

The coefficients show that a 10 year increase in provider years practiced has operated is associated with a 5.79 percentage point increase in the probability that healthcare will be sought at a given facility. For formal and informal facilities this estimate is 1.78 percentage points and 2.32 percentage points respectively. In other words, provider years in practice matters more for informal facilities than for formal however in general but the effect sizes of both are relatively modest. How can this be consistent with the qualitative interview transcripts? First of all,

providers may build trust through other ways than simply years in practice, as the discussion on provider approach demonstrates later. Furthermore, even though years in practice may be strongly associated with the demand for healthcare for certain providers, perhaps in general since distance appears to influence provider choice, the convenience of going to a provider who is opposite's one's home outweighs the benefits of going to a provider who has been in the community longer but is slightly farther way.

The following margin plots (figure 7.6 and 7.7) show the effect of years in operation on the probability that healthcare will be sought at a given formal or informal facility. For new entrants into the market, the probability that healthcare will be sought is approximately 11%. After 25 years in operation this increases to approximately 16%, which suggests a rather weak association between years in operation and the probability of healthcare being sought. For formal facilities, as one would expect, the probability that healthcare will be sought even with someone who has 0 years of experience is nearly 4 times – approximately 43 percent. This is because the MBBS immediately signals quality, whereas providers who do not have a medical degree may have difficult time distinguishing themselves initially.

Figure 7.6

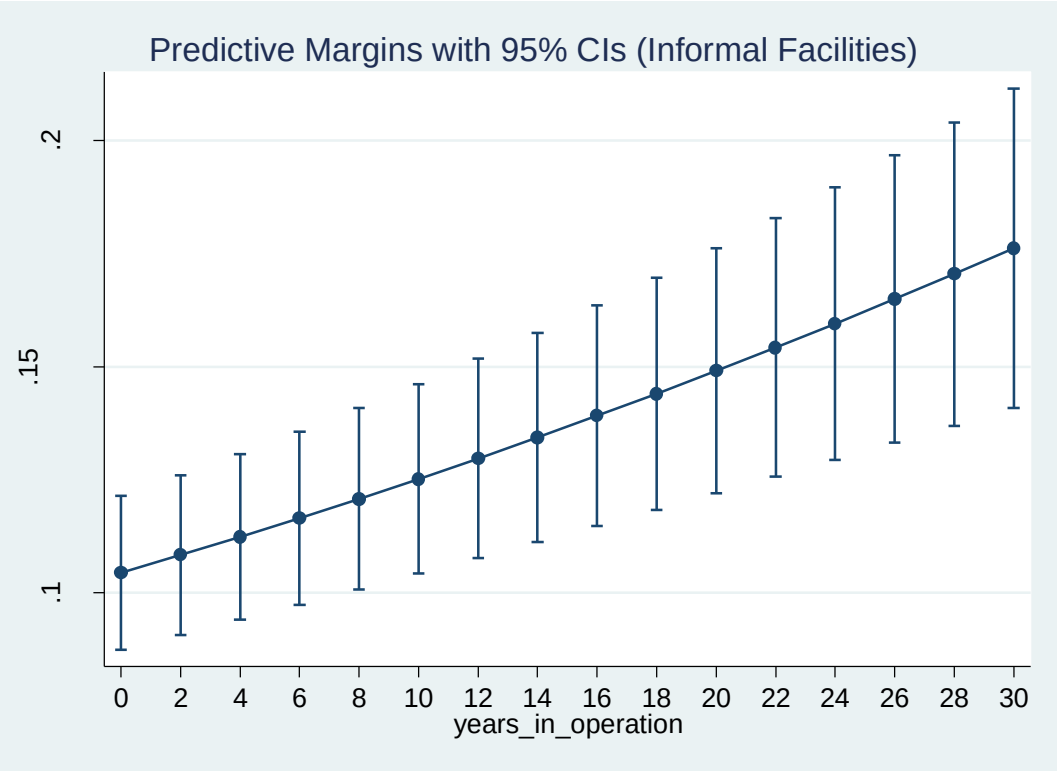
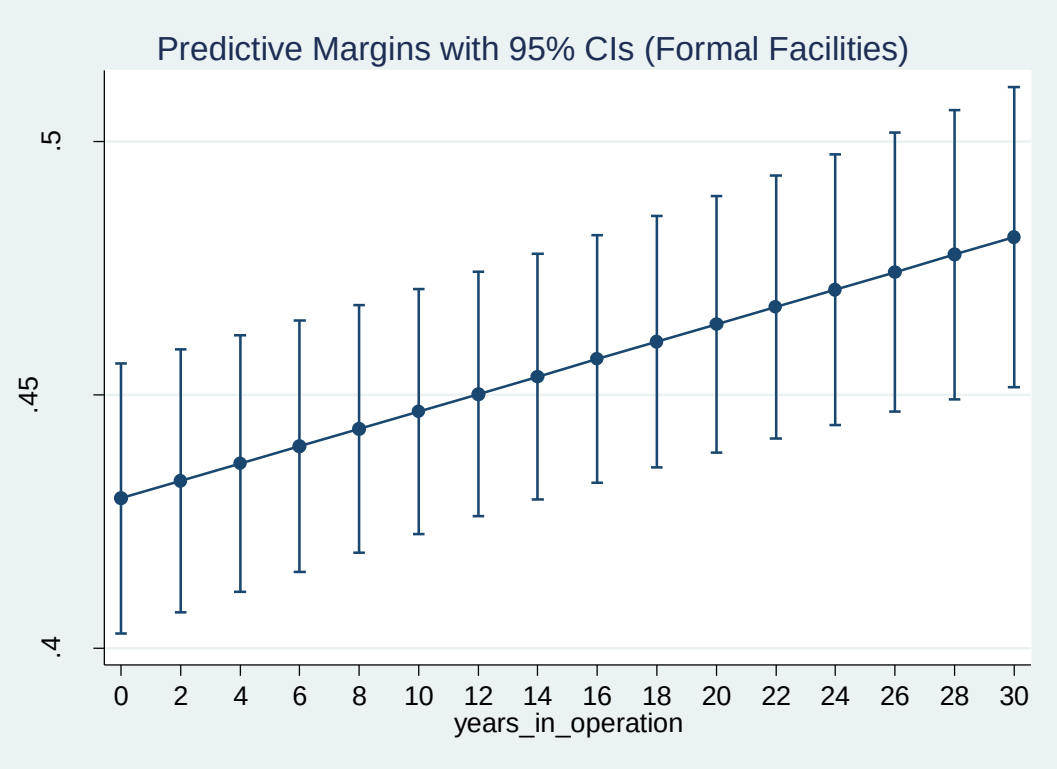


Figure 7.7



7.1e Mean waiting time

For the combined model, a 10 minute increase in waiting time results in a 2.9 percentage point *increase* in the probability that healthcare will be sought at a given facility. For formal providers, a 10 minute increase in waiting time results in a 2.67 percentage point *increase* in the probability that healthcare will be sought at a given facility. For informal providers, a 10 minute increase in waiting time a 0.28 percentage point increase in the probability that healthcare will be sought at a given facility, however this is statistically insignificant at the 10% level. In general, the marginal effects results for waiting time and provider years in practice are surprising, given that the qualitative and qualitative findings on *distance* have suggested that individuals are time-sensitive when seeking healthcare. The slight positive coefficients on the informal facilities may be because providers with more demand have a higher waiting time, or that individuals associate a busy clinic with greater reputation. One of the interview transcripts makes this point. Over all, it appears that demand for healthcare at facilities does not appear to be extremely sensitive to wait time.

7.1f Provider on main road:

This variable was primary used to estimate the effect of a provider being on a main street or road as opposed to in a small lane on the probability that healthcare is sought at this provider. For informal clinics, being on the main road is associated with an 11 percentage point increase in the probability that healthcare is sought at the facility, significant at the 1% level. This is intuitive,

given that providers who are on the main road would have higher visibility in relation to surrounding households.

7.2g Gender Segregation:

The importance of gender segregation (partition of physical wall between male and female sections of a clinic and/or separate entrances) emerged as an important issue during the qualitative research. Based on this, a variable for gender-segregation was included in the provider survey. Based on the results, we find that an informal clinic being gender segregated is associated with a 32 percent increase in the probability that healthcare will be sought there. For formal clinics, gender segregation is associated with a 12 percent point increase that healthcare will be sought at a given facility.

7.1h: Qualitative findings on the role of gender-related concerns in choice of provider:

To understand these results, one must keep in mind that the community is over 80% Pashtun, settled in the community over the past 3 decades arriving from the Northern parts of Pakistan. Pashtun family structure is deeply patriarchal and gender norms matter (some would argue more so than in other communities in Pakistan). The importance given to gender was witnessed when interviewers probed individuals about why (or why not) they visit a local NGO clinic, SINA. SINA has separate sections for men and women but does not have a partitioning wall nor does it have separate gender entrances. Since the majority of individuals who use SINA are women, the clinic is over-crowded and women occupy the area of the clinic that is reserved for men. In the qualitative transcripts, I find that one

of the most common reasons for why individuals did not visit the clinic was the fact that the clinic was not gender segregated by a wall, nor did it have separate entrances. Women felt that this would upset their husbands and men felt embarrassed to share a space with so many women. The following interviewee quotes are from those individuals who stated they didn't visit SINA owing to gender-related concerns:

Interviewer: Do you go to SINA clinic?

Respondent: No

Interviewer: Why not?

Respondent: Because there's a lot of rush, and men and women are there together, and my husband doesn't like that. Also women and kids are screaming and pushing.

Respondent: I have gone there a few times but they never make my card. Also there is so much rush over there and I hate having to stand in such a big line. All pathans come over there and you see they talk so much as well and they make so many bad rumors and then my husband doesn't like it so he tells me to not go.

Interviewer: So you go into his office and he does a check-up?

Respondent: I mean, his clinic is a little space and he's sitting alone there. On one side, men sit and on another side, women sit. Men and women enter from different doors also. If it's a man's number, he goes. If it's a woman's number, she goes. People complain to him about where they're in pain and he checks if necessary

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Respondent: There is a system there. I know that because I've been inside once or twice. A friend of mine said that his son was sick. The one issue is that the waiting line has a lot of women in it. So that's a problem for us gents.
Interviewer: True
Respondent: The thing is, it's really difficult for ladies and men to mingle in this area. In other areas, this is ignored but not here

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Respondent: Actually that doctor has known me for a very long time and he also knows my parents. So whenever I go to him he talks to me a lot about my children and stuff. So my husband does not like that. My husband also says that he wastes a lot of time. So we don't go to him even though he is really good. My parents and siblings go to him as they have sugar

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Beyond the specific case of the SINA clinic, I find that the issue of gender manifests in forms that go beyond the design of clinic and pertain more to the personality and attitude of individual doctors. This is not captured by the econometric estimates.

The following quotations from the interview transcripts demonstrates this point:

Interviewer: How long does it take there?

Respondent: Very long. It can take an hour. There is a lot of rush with him too.

Interviewer: Even though it's a smaller place?

Respondent: Yes, it's small. The women come and stand and then go home from their door, saying that when the rush decreases they'll come again. It's a small place and I pray that God gives him more room. He is a very smart doctor.

Interviewer: What do you like most about Dr. X's Clinic?

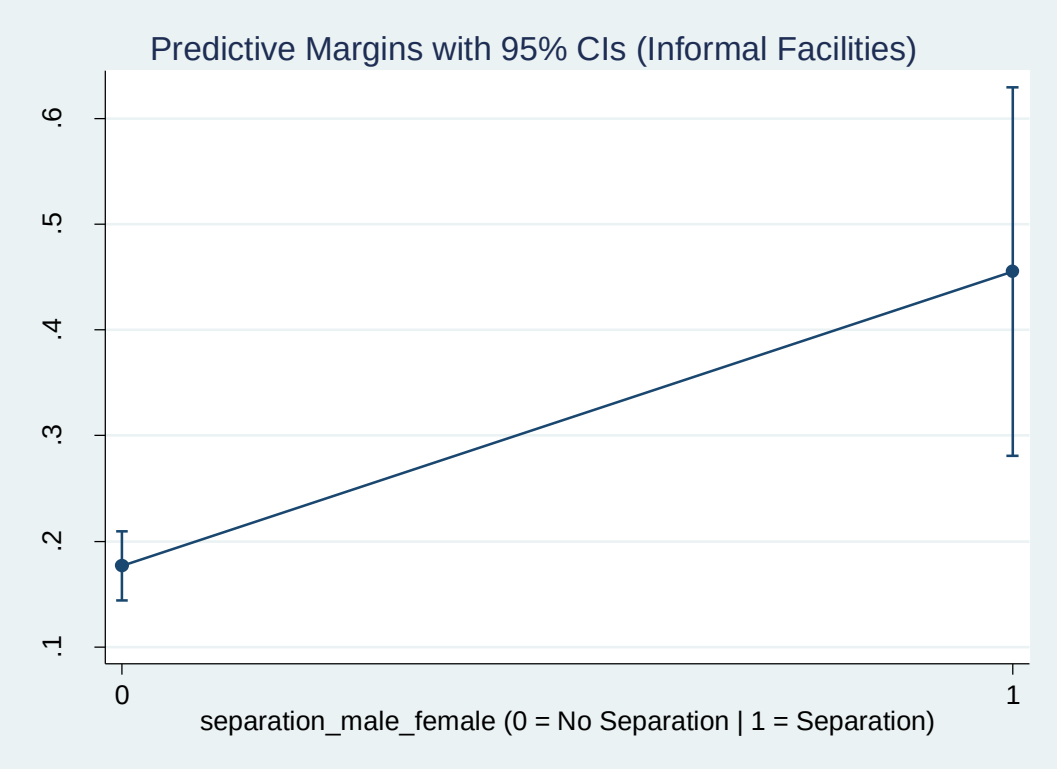
Respondent: He listens very well to his patients. He respects you.

Interviewer: He doesn't mistreat you?

Never. He treats us well. He is a very god person. When he talks, he doesn't make eye contact. He lowers his gaze and speaks to us. He is a very good person.

The quotations from above suggest that the design of the clinic is no doubt central to how individuals perceive the sensitivity of a particular provider to gender related concerns. The second quotation, which emphasizes the notion of "lowering his gaze" and "not making eye contact" suggests that providers who treat patients in accordance with Islamic values build a greater sense of trust with their patients. The following figure 7.8 shows the margin plots for the change in probability that a given facility will be visited when it moves from non-gender segregated to gender segregated:

Figure 7.8



7.2 Unobserved attributes of healthcare providers:

The most dominant theme that emerged from the qualitative research and interview transcripts was the lack of trust in the healthcare providers operating

in GSC and a deep sense of frustration with the quality of healthcare and the skill-set of the providers. Many individuals were fully aware of the informal status of doctors and their inability to cure diseases owing to lack of training or genuine interest in seeing the patient get better. The following quotes from the interview transcripts demonstrate just some of these frustrations:

Interviewer: The doctors that you have mentioned. Do other people trust them?

Respondent: They are poor people. They go regardless of the trust in the doctors, whether or not they trust the doctor. If they feel any sort of pain, they feel compelled to go to the doctor. And nobody asks about the degrees of the doctors.

Interviewer: So when the camp doctors failed to cure your rash, did you consider going to another doctor?

Respondent: No the doctors broke my heart. There are no good doctors these days. All they want is for the patients to keep returning to them. Come tomorrow. Come day after. They never give any clear cut cures because that way, they will be out of business. Am I right?

Interviewer: Why would they get caught? (Conversation is about the legality of informal providers)

Respondent: Because these people are without a certificate. They have no medical certificate. They all became doctors through a computer and they have no medical certificate. They just use an antibiotic, and if it works it works if it doesn't then it doesn't. They do it on a hunch. There is no doctor here who actually checks a patient and that according to what disease that patient has he writes a prescription so that the patient isn't in anymore pain or discomfort. They write prescriptions for antibiotics like they give an animal an injection or give it a tetanus pill and if they get better they get better. These are the kind of doctors we have. They don't properly know about healthcare. Patients go to them if they get better they get better if they die they die

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Respondent: That very night he got so sick, we took him to Jinnah hospital and then at 12 o'clock he passed away. Now if in this area there was a good and **proper doctor** and if my kid had been properly diagnosed then he would have gotten **proper healthcare** now wouldn't he?

Interviewer: Has anyone in the past 2 years been sick in your house where they've had to go to the hospital?

No thank God, we haven't been sick. These things aren't in the doctor's' hands, for big illnesses, hospitals are jails, everything's in God's hands. I'm afraid of two things in this world, doctors and the police. When I get high blood pressure, I get angry, I tell people to go away. And when my blood pressure lowers, I get sweaty. Today I'm not angry, I'm excited!

The selections from the interview transcripts cited above are just a few of many that demonstrate a deep distrust in both local healthcare providers and in the health system. Given this, we see individuals making many religious references and Allah and placing their faith in God to cure their illness. The general lack of trust also helps potentially explain why distance is such a key explanatory variable. If individuals do not believe there are many good doctors in the area, they may just pick the closest option, say a provider who operates in their lane, since it minimizes time and cognitive cost of searching for one. Having said the above, there were several interview transcripts in which individuals did demonstrate some level of trust in the provider they went to and others who even denied the existence of informal providers, for instance:

> **Interviewer:** Okay. And do you anything about any fake doctors? Have you ever heard about them or encountered them? Those who say they're doctors but they're not.
>
> **Respondent:** I've never heard of anything like that and neither have I seen anything like that myself so why would I degrade someone by saying their false without having seen it with my own eyes. Now if you say this man is wrong then I'll ask why.

For our purposes, it is worth carefully analyzing transcripts where some level of trust was demonstrated and then delineating what constitutes trust in a community such as GSC.

The qualitative literature in the field of health-seeking behavior cited earlier has emphasized the role of provider personality (and the healer-patient relationship) in the decision of a family member to seek healthcare at a given facility., What is of interest to policy makers in Pakistan is not that an individual doctor's personality matters, but rather the *way in which* it matters. In other words, how do patients evaluate individual doctors' traits in a community with such a high percentage of informal healthcare and low quality of healthcare? The earlier sub-section on the role of gender suggested some of the character traits of providers that pertain specifically to how gender sensitive they are, such as how they "lower their gaze" when talking to female patients. This section will expand upon these ideas by focusing on other themes that emerged in the qualitative literature, such as the role of provider religiosity and the unique mannerisms and approach of doctors in the consultation room.

7.2a Importance of Religiosity:

A very poignant theme that ran very strongly through the qualitative interviews was the reference to religion or God. This was made both in specific relation to the provider himself, but also to the location of the clinic, say in relation to a local mosque. In a community where in general, the quality of informal providers is perceived to be low and individuals appear to be quite aware that the providers do not hold medical degrees, the references to religion suggest that

individuals associate "healing ability" with factors that go beyond what one would traditionally associate with an allopathic provider. What is interesting is that the vast majority of doctors were not "traditional healers". Traditional healers, referred to as "hakeem" in the South Asian context, hardly feature at all in the choice set of providers that emerged from the household survey. Instead, it appears as though the majority of informal doctors are "emulating" the formal sector doctors, giving out medicines, injections, and making referrals to tertiary formal facilities when a particular case is beyond their knowledge. Even when their informal status is not in question, they are still referred to as "doctor" by the community members.

In the qualitative interviews, respondents were asked an open-ended question, which was, "where do you go and seek healthcare and why?" The intention of this question was to glean insights about what motivated to go to particular providers amongst the many providers that practiced in the community, but without leading on the respondent to give *particular types* of responses. When the response was too general, we would probe into what *characteristics* of the providers were most important to patient when seeking healthcare. The following quotations are examples of what some of the respondents said regarding the "good doctor" who had the highest market share of any provider in the community:

> **Interviewer: How do you make these choices?**
>
> **Respondent:** For instance if there is cough, cold, motions then there is no benefit in showing any of the doctors here, you will not get better, then you go to the 'good doctor' and then you see if you are not getting better then you go further to a big hospital or you go to Malir…
>
> **Interviewer: What is 'good doctor's' name?**

Respondent: I think it is Dr. Z, he is called 'good doctor' though. His clinic is right in front, in the wide alley there. You go right from the mosque. He is good, people get better when they go to him.

Respondent: There is this one doctor, when you go a bit further from here, there is a wide alley, and everyone calls him 'good doctor'. He is Masha Allah very punctual is saying all five of his prayers and Allah has put healing power in his hand. He understands everything. Just recently, my husband fell sick and he was not getting better from anyone's treatment. The good doctor's treatment worked.

7.2b Approach of provider:

One of the most important findings of the qualitative interviews was how much weight and importance patients placed upon the approach of the provider to their healthcare. The word approach refers to many different things, such as the diligence with which he checks the patient, the tone of voice he uses, time given to the patient and how the provider collects payments. This broadly ties in with the literature on patient-healer interactions, but the interviews shed light on *what* approach certain providers adopt, is of value in the Pakistani context. The following quote from the interview transcripts summarizes clearly aspects of a provider's approach that respondents seem to value consistently:

Respondent: He doesn't give her injections because he says this isn't my patient, this is Jinnah's patient. He isn't greedy with money like that. The best thing is he does full check-up and he gives us time. Other doctors are very hurried. He gives us a lot of time and attention, no matter how many patients are waiting. He sits from 9 am to 1 pm, then 6pm to 11 pm. I always feel better when treated from him. He gives me injections, gives me tests for my respiratory issues and treats me in that way. He doesn't give different medicines each time he just gives what is required.

This particular respondent, like several others, greatly values how much time the provider gives them and how carefully the provider checks them. This is broadly consistent with the literature on quality in Das et al (2016) which shows that doctors who follow more checklists are able to charge more, since patients can visibly perceive the following of checklists as a sign of quality (and consistency) If one explores this particular quote more deeply, one can see that what is also valued about the informal provider is how well he is able to execute tasks that are generally the domain of MBBS doctors, such as giving tests and injections. A fairly extensive literature focusses on the particular role that injections play in informal healthcare provision in low and middle income countries (Kermode, 2004).

A major theme that emerges out here is how negatively patients view providers whose approach towards healthcare delivery appears "transactional". For instance, the phrases, "he isn't greedy like that" and "he doesn't give me medications each time just what's required" suggests that patients have come to expect transactional interactions, such that any contrasting experience can build trust and confidence in the provider. This sentiment was expressed in several interviews:

Interviewer: Has Dr. Y been around here long?

Yes, for as long as we've been here.

Interviewer: So you know him well?

Yaar, even if I don't have money, he's willing to see me anyway. He's like a brother. His wife is also a doctor.

Interviewer: So what in your opinion is a good doctor? Like what qualities should a good doctor possess?

Respondent: A good doctor, in my opinion… is a mother… is a father. That with he feels your pain as you do. That your ordeal is his ordeal as well. Tariq Jameel said that doctors these days consider their patients as customers. One who thinks of them as customers is not a doctor.

The first of these two responses demonstrates another idea, which is that patients have particular arrangements with informal sector providers that allows a payment schedule. Given how distance sensitive individuals are and how the vast majority of providers capture extremely localized markets, this creates a situation of repeated interactions (as in game theory) in any given month and over several years. Such informal arrangements not only allow patients to access healthcare when there are credit constraints but further cement the reputation of a provider as "non-transactional", or a "mother" or "father".

A third theme that emerges regarding the "approach of the provider", connected to the first two, is how individuals *view* the formal sector. As the quantitative survey suggests, formal sector providers make up approximately 44% of total providers in the dataset. Individuals are forced to use the formal sector (private and public) when their illness does not subside after multiple visits to informal sector providers, as earlier interview transcripts have demonstrated. However, many people view healthcare-seeking in the formal sector not only as highly inconvenient but also feel that they are not accorded respect in large healthcare institutions. While some individuals go immediately to the formal sector upon falling sick, this is not the norm. The following interview transcripts are emblematic of the broader sentiments towards the formal sector:

Interviewer: When was the last time you went to a hospital and what happened?

Respondent: I went to Ziauddin last. For my children. I don't like it there. They're not particularly caring and almost insensitive. I went into labor when I was 8 months pregnant, and we alone women went and they didn't entertain us. They wouldn't admit me till I brought a file. But I didn't have a file.

My husband was still getting it made and it was taking long. They even removed me from the labor room, and I was in so much pain. Then when they realized how bad the situation was they took me for the operation before the file could be made. It was an emergency. I had even gotten my name registered for delivery in my seventh month and been there for check-ups, but they still didn't take my case. I feel like if we had money everything would be fine.

Interviewer: What's your favorite hospital, where do you get the best healthcare?

Respondent: For the most part, Zia Uddin is the best. Here the poor people can't get healthcare, healthcare is for those who have money, you can get in through bribery, there's no more honestly anymore. (Tie into inconvenience stuff earlier)

As cited in previous sections, there is a rich literature from Pakistan and low and middle income countries globally that suggests growing frustration with healthcare provided by the public sector (Duflo and Banerjee, 2011) However, what some of the interview transcripts highlight is that even when individuals seek healthcare at private formal facilities, they are often accorded little respect and struggle to receive the type of healthcare someone with a higher education or income level would receive. This sentiment is expressed strongly by the phrase, "healthcare is for those who have money". While the interview transcripts no doubt contain stories of individuals who have had positive experiences in public and private hospitals, there seems to be evidence of frustration with large formal

instituions in general with the level of treatment that they give out to residents of GSC.

Chapter 8
Discussion and Implications

The results from the quantitative and qualitative research are striking in certain ways and broadly consistent with the literature in other ways. The results not only open up avenues for further research in this field, they also have a number of implications for various actors in the Pakistani health system, ranging from government to the private health sector. In the discussion section I will discuss the academic implications of this work and the implications section I will draw broader lessons for policy and for the various actors operating in the Pakistani health system.

Discussion:

The high density of providers and the extensive choice-set for households, was, descriptively, an important point from which to begin the analysis. 718 households visited 130 unique providers in the month prior to conducting the survey. The mean distance of a household to an informal clinic was 0.34 km, to a formal clinic was just over 0.5 km, and to a formal facility (including hospitals) was approximately 1.2 km. This data immediately suggest that the competition amongst providers should be extremely high and that price should be a key variable in influencing the probability that an individual will pick a given facility. However, the findings suggested that the market looked less like one large competitive market and instead a collection of much smaller local markets. Furthermore, the market displayed certain characteristics of a monopolistic market: Local geographical areas captured by a few providers, seemingly low

barrier to entry and exit (as suggested the by the years_in_operation findings) and the differentiated services being offered by the providers, largely in terms of unobservable outputs (largely manifest in terms of unobservable outputs).However, the potential monopolistic structure of the market remains to be empirically validated through future research.

One question that is raised by this thesis is, why is distance such an important factor in healthcare-seeking? Beyond time cost of travel, distance also presents two additional costs – money cost and social costs. It is fairly intuitive that greater distance means that some form of transport may have to be used – which can be a burden on families in GSC, especially since households are visiting health providers around three times a month. Beyond this, distance represents social cost for women who are expected (in the eyes of both their family and community members) to honor appropriate public cultural norms, and for their husbands who seek to maintain their expected role to "protect" their wives. In a conservative Pashtun community where issues of gender are paramount, as discussed earlier, distance means women have to leave the vicinity of their home to walk to a clinic. The following qualitative interview transcript, cited before, suggests some of the social costs of walking more than a trivial distance to access a health clinic:

Interviewer: How long does it take there?

Respondent: Very long. It can take an hour. There is a lot of rush with him too.

Interviewer: Even though it's a smaller place?

Respondent: Yes, it's small. The women come and stand and then go home from their door, saying that when the rush decreases they'll come again. It's a small place and I pray that God gives him more room. He is a very smart doctor.

Why don't you like going to the doctor?
Who will wear a burqa and go to the doctor, you feel lazy. I just take medicine at home

The first of the two transcripts show that the ability of women to pick up a token, go back to the vicinity of their home, and return later is a way of minimizing the social cost of being outside the home. Such convenience is only possible when providers are in close proximity to the home. The second shows how women perceive the act of leaving the home at all, suggesting strongly what societal expectations are of them in GSC.

The findings on gender sensitivity are consistent with earlier qualitative literature from Pakistan and anthropological literature on health-seeking behavior. What was interesting in our findings was the *extent* to which it mattered, both in the open-ended interviews and the quantitative data. As the earlier section has suggested, it is important to ground gender related concerns not only in the cultural norms of GSC but also the general lack of trust in the healthcare system and informal providers. Gender sensitivity and the approach of the provider becomes all the more important when the overall quality of healthcare is perceived as low, with individuals consequently choosing providers on other characteristics. Finally, it is useful to view gender from the lens of social capital, introduced in the literature review section. If healthcare-seeking were

purely an individualistic exercise, gender related issues may have mattered less. However, in GSC, which is majority Pashtun community and where there is a particular understanding about the appropriate place of women in public spaces, allowing women to leave home unescorted to seek healthcare is viewed from the lens of personal and family reputation. An individuals' social capital must be considered in the process of healthcare seeking.

It must be noted that this thesis, as an exploratory work that uses mixed methods analysis for the first time (in understanding healthcare choice in Pakistan), has a number of limitations which make ground for further research in this topic. The first is that I do not calculate the direct tradeoffs made between the informal and formal healthcare providers, something that would be better addressed through a nested logit model. Secondly, as mentioned before, is the issue of endogeneity of price and the corresponding fact that the claims in this thesis are associative, not causal. Future research should seek to apply more sophisticated discrete choice modeling to this topic as well as explore potential instrumental variables for price, as the Das paper on school choice in Pakistan has done. Finally, this thesis does not stratify the results by disease type or by who in the household is seeking healthcare. While those results would no doubt be interesting and illuminating, the scope of this paper has been to build a broad (yet rich) picture of healthcare-seeking, in order to pave the way for answering more specific questions in future work.

Implications:

The previous section discussed some of the academic implications of the findings from the study. This section addresses the implications for both policy and a range of actors within the Pakistani health system (private, non-profit, governmental).

One of the motivations of this thesis was to inform the operational strategy of organizations delivering healthcare in locales such as GSC. The estimates of price and the margin plots shown in the findings section suggest that price is only modestly associated with the probability that healthcare will be sought at an informal facility, and very weakly associated with the probability that healthcare will be sought at a formal facility. Although these estimates are not causal, they are still quite informative. Recently, there has been a growing interest in questions of sustainability related to healthcare initiatives in low and middle income countries. However, there seems to still be a widely held perceptions that interventions made in low income communities such as GSC cannot be financially sustainable. For instance, the SINA clinic system, which was mentioned earlier in this thesis, runs a clinic in the community. Its marginal cost is Rs. 350 (USD 3.34) dollars per patient visit. (SINA financial reports) However, it charges only Rs. 5 and meets its shortfall through external donations. While SINA has a commitment to treating the poorest members of the city for nearly free, it must be noted that the mean price of a visit to an *informal facility* is Rupees 450 ($4.3), which is nearly a dollar above SINA's marginal cost. (SINA financial reports, 2014) This suggests that there is a strong case for group such as SINA to charge, at the very least, its marginal cost and cover operational costs. Thereby, reducing its reliance on external donations.

The second insight is that even though distance sensitivity is much lower for formal providers relative to informal providers, it is still non-trivial for formal providers. Given this, it may make sense for healthcare NGO's or private sector providers, to consider building smaller but better distributed clinics in large communities such as GSC. Although there are tradeoffs with such a strategy (e.g. large clinics can enjoy economies of scale), smaller entities can make up the charging above marginal cost in a market where there is a demand for culturally sensitive formal healthcare.

The third major insight which emerges from this work comes from the qualitative research, which emphasizes in great detail the attributes of providers that individuals' value in a community where there is general mistrust and lack of faith in healthcare providers. The qualitative work presents strong evidence for why policies that focus simply on reducing price and/or distance may not be very successful, since individuals' value a range of provider attributes. This is broadly consistent with the anthropology literature on patient-healer relationships. However, the unique contribution of this work is the *way* in which patient-healer relationships matter in a low income informal settlement in Karachi Pakistan. The qualitative work provides a strong justification for training providers in a range of soft-skills that comport with contextually relevant norms and sensitivities and which may, in part, be emulative of popular informal providers in the community. Training programs should emphasize the importance especially of gender sensitivity and following of checklists and thorough (contextually relevant) in-clinic interactions in dealing with patients. Furthermore, ways to increase the productive time spent in clinics with patients should be emphasized.

In addition to the training programs, such soft-skills should be a key part of the evaluation process of physicians along with the expected clinical excellence of quality.

Finally, the data shows comprehensively that the vast majority (greater than 80%) of healthcare providers visited by residents of GSC are part of the formal and informal *private* health sector. The qualitative research emphasizes some of the negative experiences that individuals have when seeking healthcare at public sector facilities as well as large private facilities. The high levels of importance given to the attributes of providers and in-clinic interaction with providers is incongruous with the type of healthcare offered by the public sector LMIC's (Das et al, 2016). Given the high demand for formal healthcare, I propose that countries such as Pakistan dedicate resources to helping formal sector private or non-profit providers develop more facilities and subsidize these facilities for the lowest income quintiles. Providers or networks that rank high both on clinical quality and on soft-skills should be incentivized appropriately. This thesis as well as other emerging literature suggests that governments of countries such as Pakistan ought to reconsider their role in the health system, perhaps moving away from the delivery of services to playing more of a role as a steward, facilitator, or coordinator. The kind of treatment that patients in locales such as GSC demand is difficult to deliver through a public health system with the kind of path dependence and incentive structures that Pakistan's current system has. Health systems must be flexible to respond to the preferences of the population being served. Smaller entities, be they non-profit or for-profit, may be better equipped

to expand into marketplaces such as GSC and deliver the high quality of healthcare that its residents demand and expect.

Chapter 9
Conclusion

This study represents the first mixed-methods of such scope (in context of Pakistan) and improves our understanding of healthcare-seeking patterns in urban communities such as GSC as well as informal healthcare markets in general. However, this work is largely exploratory, with coefficients being associational rather than causal. Nevertheless, it paves the way for more focused work with application of sophisticated discrete choice models (e.g. nested logit) to healthcare choice and instrumental variable strategies that will help us delineate the causal impact of price, distance and other aforementioned cultural and social factors. Future research should also aim to quantitatively measure the quality of care (as the Das et al 2016 paper does) and un-observable attributes of providers (such as reputation, trust levels) to make discrete choice models more robust and reduce biases in the coefficients. My study serves as a useful benchmark and starting point for further work of this nature.

Appendix A (Household Survey)

Screening Questionnaire: CS-15017

Area/Block_____ Contact/ID No._____ Interview No. _____ Date _____
Longitude_____ Latitude _____Interview start time _____End time_____

Male	1	Female	2

Complete Address of Respondent:……..……..

Landmark:…… Interviewer's Name:……

S2. Did you participate in any research activity within six month? **(SA)**

Yes	1	*terminate interview*
No	2	

S3. What is your age? **(SA)** _____ Years (Note actual age)

Less than 18yrs	1	*terminate interview*
18-24 years	2	
25-34 years	3	
35-45 years	4	
45-54 years	5	
55-65 years	6	
Above 65 years	7	*terminate interview*

S4. What is your education? **(SA)**

Middle school or less	1
Metric	2
Intermediate	3
Graduate	4
Post Graduate	5
Other (specify)……..	6

S4a. What is your ethnicity **(SA)**
Ethnicity……

S5. What is your marital status? **(SA)**

Married	1	Continue Interview
Unmarried	2	Terminate Interview

If interviewing a husband ask wife's education and occupation & If interviewing a wife then ask husband's education and occupation and note in S6.

S6. Tell me your spouse's education and occupation **(SA)**

Education	
Occupation	

S7. What sort of work the chief wage-earner of your household do? Chief wage-earner is that member of your household who contributes the maximum in household expenses.

Individual……..
Detail of profession……

S8. What is the education of chief wage-earner of your household? Chief wage-earner is that member of your household who contributes the maximum in household expenses.

Detail of Education.....

S#		Education of Chief Earner						
		1	2	3	4	5	6	7
	Occupation of Chief Earner	**Illiterate**	**Less than 5 class**	**5-9 classes**	**Matriculation**	**Intermediate**	**Graduate**	**Post-Graduate**
	Unskilled Worker	E2	E2	E1	E1	D	D	C
	Petty Trader	E2	E2	E1	E1	D	C	C
	Skilled Worker	E2	E2	E1	D	D	C	C
	Non-Executive Staff	E2	E2	D	D	D	C	C
	Supervisor Level	D	D	C	C	B	B	B
	Small Business	D	D	C	C	B	B	A2
	Lower/Middle Officer	D	C	C	C	B	B	A2
	Professional	B	B	A2	A2	A2	A1	A1
	Medium Businessman	B	A2	A2	A2	A2	A1	A1
	Senior Executive officer	B	A2	A2	A2	A1	A1	A1
	Large Businessman	A2	A2	A2	A2	A1	A1	A1

SEC	
A1	1
A2	2
B	3
C	4
D	5
E1	6
E2	7

S10. How much are you involved in and are aware of various expenditures and their amounts, within your household? **(SA)**

Completely aware	1	*Continue Interview*
Somewhat aware	2	Terminate interview and request to talk to someone else in the household who is involved in and aware of various household expenditures
Not aware at all	3	

*Interviewer to check and recruit according to **Male/Female** ratio as per the screening questionnaire and go to the **Main questionnaire***

Main Questionnaire: CS-15017

POPULATION INFORMATION

M1. Please tell me, in total how many people live in your household?
Number of people _____

M1. H How many children? _____

M2. Please tell me who has the highest level of education in your household? And till what level?
Highest educated person in household **(SA)** _____

Their level of education **(SA)** _____

M3. Please tell me how many people in your household work to earn? What is your relationship to each of them?

Earner no. 1	Relationship with respondent: _____
Earner no. 2	Relationship with respondent: _____
Earner no. 3	Relationship with respondent: _____
Earner no. 4	Relationship with respondent:
Earner no. 5	Relationship with respondent:

M4. How many children in your household study in a school?

Number of children	_____
No one studies in school	99

PERMANENT INCOME INDICATORS

Now I would like to ask you few questions about your household. Let me assure you once again that the information you provide will be kept strictly confidential and will only be used for the purpose of this research only.

M5a. How many rooms does your house have? Number:_____
M5b. How many chairs? Number:_____
M5c. How many tables? Number:_____
M5e. How many motorbikes? Number:_____
M6. Now I will name some common household items. Please tell me which of these you have in your house.
(SA)

Common household items	Yes	No
Electricity	1	2
Bicycle	1	2
Clock	1	2
Washing machine	1	2
Fridge	1	2
Fixed Line telephone	1	2
Mobile/Cellular Phone	1	2
Television	1	2
Computer	1	2
Sewing Machine	1	2
Water Pump	1	2
Bed	1	2
Camera	1	2
Water Tank	1	2
Wife cell phone	1	2
House on rent?	1	2

HOUSEHOLD EXPENDITURE

Now I Will Ask You About The Expenses You Have Made Related The Services And Products Of Health.

Please tell me how much did you spend on the following during the LAST MONTH:

M8. Food, including such things as rice, meat, fruits, vegetables, and cooking oils
Monthly Expense in Rs. _____ No Expenses……..99

M9. Heating fuel such as kerosene oil, gas etc.
Monthly Expense in Rs. _____ No Expenses……..99

M9b. Which medium you usually use for Fuel?
Medium…….

M10. Electricity bills
Monthly Expense in Rs. _____ No Expenses……..99

M11. House rent
Monthly Expense in Rs. _____ No Expenses……..99

M12. Water expense (drinking + other household needs)
Monthly Expense in Rs. _____ No Expenses……..99

M13. Mobile phone credit expense (husband + wife)
Monthly Expense in Rs. _____ No Expenses……..99

M14. Children school fee and other educational expenses
Monthly Expense in Rs. _____ No Expenses……..99

M17. Transportation/Commute expenses
Monthly Expense in Rs. _____ No Expenses……..99

M18. All other goods and services
Monthly Expense in Rs. _____ No Expenses……..99

M19. Where does the drinking water come from to your house?
Means of Drinking water……..

M19 H How much drinking water does your household consume every day?

M20. How much money do your household usually save every month?
Rs……

ILLNESS PROFILE

Now I will ask you some questions about the illness and disease people have in your house

	Myself		Husband/Wife		Children		Others	
	Yes	No	Yes	No	Yes	No	Yes	No
Blood Pressure	1	2	1	2	1	2	1	2
Diabetic/Sugar	1	2	1	2	1	2	1	2

Diarrhea	1	2	1	2	1	2	1	2
General Fever	1	2	1	2	1	2	1	2
Maternity Conditions/Complications	1	2	1	2	1	2	1	2
TB	1	2	1	2	1	2	1	2
Malaria	1	2	1	2	1	2	1	2
Burns	1	2	1	2	1	2	1	2
Heat Stroke	1	2	1	2	1	2	1	2
Mental Health Issue	1	2	1	2	1	2	1	2
Pneumonia	1	2	1	2	1	2	1	2
Flu	1	2	1	2	1	2	1	2
Cold & Cough	1	2	1	2	1	2	1	2
Jaundice	1	2	1	2	1	2	1	2
Asthma	1	2	1	2	1	2	1	2
Heart Attack	1	2	1	2	1	2	1	2
Stroke	1	2	1	2	1	2	1	2
Chicken Pox	1	2	1	2	1	2	1	2
Cancer	1	2	1	2	1	2	1	2
Major Accident	1	2	1	2	1	2	1	2
Gastro Problems	1	2	1	2	1	2	1	2
Others								

HEALTH INSURANCE

HI1. Does any member of your family have any health insurance/government health plan? (explain what insurance is if needed) **(SA)**

Yes	1
No	2

H1H. Are you part of any government employee health insurance plan?

Yes 1
No 2

HI2. Is a member of your family part of a local committee (Anjuman), such as those for funerals? **(SA)**

Yes	1	***Ask Who is a member and then go to H12a***
No	2	***Go to P1 in the next section***

Who is a member (relation with them): _____

H12a. How much money do you or your household member who is a part of the committee, contribute(s) to it? And How frequently? **(SA)**
Contribution in Rs._____

Every month	1
Every 3 months	2
Every 6 months	3
Other (specify) _____	4

BELIEFS AND PERCEPTIONS

P1. Please tell me how would you rate your overall health?
(*Interviewer to note the answer in column P1 in the grid below*) ***(SA)***

P2. Please tell me how would you rate your family's overall health?
(*Interviewer to note the answer in column P2 in the grid below*) ***(SA)***

	P1 Own health	**P2 Family's health**
Very good	1	1
Good	2	2
Moderate	3	3
Bad	4	4
Very bad	5	5

HEALTH KNOWLEDGE

HK1. What treatment did you give your child last time he or she had diarrhea?

ORS	1
Tablets	2
Injection	3
Other (Specify) _____	

HK2. Have you taken your child for regular immunizations?

Yes	1
No	2
Only some children/not all	3

HK3. Do you regularly boil the water you use to drink at your house?

Yes	1	No	2

HEALTH EXPENDITURE

HE2. In the last year, which of the following did your household use to pay for health expenditures? **(SA)**

	Household	
	Yes	**No**
Current income of household members	1	2
Savings	1	2
Health Insurance plan	1	2
Sold items (furniture, jewelry etc.)	1	2
Family members outside the household	1	2
Borrowed from a friend outside the family	1	2
Zakat	1	2

LIST OF HEALTHCARE PROVIDERS AND EXPENDITURES

Respondent:

In the **last month**, can you tell me about all the facilities in which **you** have gone to seek healthcare upon falling sick with an illness? (Clinics, Hospitals, Hakeem etc.) *{If more than 4 unique providers, write on back side of page}*

Provider 1 name ----------	**Visit tally**	**Visit 1**	**Visit 2**	**Visit 3**	**Visit 4**	**Visit 5**
Transport costs ----------	**Illness**					
Time it takes to reach there ----------	**Total Cost (meds, tests, service)**					
Government/Private/NGO/Hakeem						
Wait times:						

Provider 2 name ----------	**Visit tally**	**Visit 1**	**Visit 2**	**Visit 3**	**Visit 4**	**Visit 5**
Transport costs ----------	**Illness**					
Time it takes to reach there ----------	**Total Cost (meds, tests, service)**					
Government/Private/NGO/Hakeem						
Wait times:						

Provider 3 name ----------	**Visit tally**	**Visit 1**	**Visit 2**	**Visit 3**	**Visit 4**	**Visit 5**
Transport costs ----------	**Illness**					
Time it takes to reach there ----------	**Total Cost (meds, tests, service)**					
Government/Private/NGO/Hakeem						
Wait times:						

Provider 4 name ----------	**Visit tally**	**Visit 1**	**Visit 2**	**Visit 3**	**Visit 4**	**Visit 5**
Transport costs ----------	**Illness**					
Time it takes to reach there ----------	**Total Cost (meds, tests, service)**					
Government/Private/NGO/Hakeem						
Wait times:						
Circle above options						

Cost of medications purchased without going to health facility first in last month for yourself:

Any major hospitalizations in last year: Y/N
Cause: …….. Cost: ……..
Cause: …….. Cost: ……
Cause: …… Cost: …….

Respondent Spouse:

In the **last month**, can you tell me about all the facilities in which **your spouse** have gone to seek healthcare upon falling sick with an illness? (Clinics, Hospitals, Hakeem etc.) *{If more than 4 unique providers, write on back side of page}*

Provider 1 name ---------------------	**Visit tally**	**Visit 1**	**Visit 2**	**Visit 3**	**Visit 4**	**Visit 5**
Transport costs ------------------------------------	**Illness**					
Time it takes to reach there -------------------------------	**Total Cost (meds, tests, service)**					
Government/Private/NGO/Hakeem						
Wait times:						

Provider 1 name ---------------------	**Visit tally**	**Visit 1**	**Visit 2**	**Visit 3**	**Visit 4**	**Visit 5**
Transport costs ------------------------------------	**Illness**					
Time it takes to reach there -------------------------------	**Total Cost (meds, tests, service)**					
Government/Private/NGO/Hakeem						
Wait times:						

Provider 1 name ---------------------	**Visit tally**	**Visit 1**	**Visit 2**	**Visit 3**	**Visit 4**	**Visit 5**
Transport costs ------------------------------------	**Illness**					
Time it takes to reach there -------------------------------	**Total Cost (meds, tests, service)**					
Government/Private/NGO/Hakeem						
Wait times:						

Provider 1 name ---------------------	**Visit tally**	**Visit 1**	**Visit 2**	**Visit 3**	**Visit 4**	**Visit 5**
Transport costs ------------------------------------	**Illness**					
Time it takes to reach there -------------------------------	**Total Cost (meds, tests, service)**					
Government/Private/NGO/Hakeem						
Wait times:						

Cost of medications purchased without going to health facility first in last month for spouse

----

Any major hospitalizations in last year: Y/N
Cause: …………………………………… Cost: ………………………..
Cause: ……………………………………. Cost: ………………………
Cause: …………………………………… Cost: ………………………

Respondent Children:

In the **last month**, can you tell me about all the facilities to which **your children** have gone to seek healthcare upon falling sick with an illness? (Clinics, Hospitals, Hakeem etc.) *{If more than 4 unique providers, write on back side of page}*

Provider 1 name ----------------------	**Visit tally**	**Visit 1**	**Visit 2**	**Visit 3**	**Visit 4**	**Visit 5**
Transport costs ------------------------------------	**Illness**					
Time it takes to reach there --------------------------------	**Total Cost (meds, tests, service)**					
Government/Private/NGO/Hakeem						
Wait times:						

Provider 1 name ----------------------	**Visit tally**	**Visit 1**	**Visit 2**	**Visit 3**	**Visit 4**	**Visit 5**
Transport costs ------------------------------------	**Illness**					
Time it takes to reach there --------------------------------	**Total Cost (meds, tests, service)**					
Government/Private/NGO/Hakeem						
Wait times:						

Provider 1 name ----------------------	**Visit tally**	**Visit 1**	**Visit 2**	**Visit 3**	**Visit 4**	**Visit 5**
Transport costs ------------------------------------	**Illness**					
Time it takes to reach there --------------------------------	**Total Cost (meds, tests, service)**					
Government/Private/NGO/Hakeem						
Wait times:						

Provider 1 name ----------------------	**Visit tally**	**Visit 1**	**Visit 2**	**Visit 3**	**Visit 4**	**Visit 5**
Transport costs ------------------------------------	**Illness**					
Time it takes to reach there --------------------------------	**Total Cost (meds, tests, service)**					
Government/Private/NGO/Hakeem						
Wait times:						

Cost of medications purchased without going to health facility first in last month for spouse:

Any major hospitalizations in last year: Y/N
Cause: ………………………………………. Cost: ………………………..
Cause: ……………………………………….. Cost: ………………………
Cause: ………………………………………. Cost: ……………………….

Other members in household:
In the **last month**, can you tell me about all the facilities other members of the **household (example parents)** gone to seek healthcare upon falling sick with an illness? (Clinics, Hospitals, Hakeem etc.) *{If more than 4 unique providers, write on back side of page}*

Provider 1 name --------------------	Visit tally	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5
Transport costs ------------------------------------	Illness					
Time it takes to reach there -------------------------------	Total cost (meds, tests, service)					
Government/Private/NGO/Hakeem						
Wait times:						
Person:						

Provider 1 name --------------------	Visit tally	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5
Transport costs ------------------------------------	Illness					
Time it takes to reach there -------------------------------	Total cost (meds, tests, service)					
Government/Private/NGO/Hakeem						
Wait times:						
Person:						

Provider 1 name --------------------	Visit tally	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5
Transport costs ------------------------------------	Illness					
Time it takes to reach there -------------------------------	Total cost (meds, tests, service)					
Government/Private/NGO/Hakeem						
Wait times:						
Person:						

Provider 1 name --------------------	Visit tally	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5
Transport costs ------------------------------------	Illness					
Time it takes to reach there -------------------------------	Total cost (meds, tests, service)					
Government/Private/NGO/Hakeem						
Wait times:						
Person:						

Cost of medications purchased without going to health facility first in last month for spouse:

Any major hospitalizations in last year: Y/N
Person ……… Cause: ………………………………………. Cost: ………………………..
Person…………Cause: ……………………………………….. Cost: …………………

AP1. Rank the importance of provider attribute on a scale of 1-3 in determining whether you will go there: **(SA)**

	Extremely important (1)	**Less important (2)**	**Not at all important (3)**
In-house pharmacy	1	2	3

Short waiting time	1	2	3
Distance from home (hospital)	1	2	3
Distance from home (clinic)	1	2	3
Time given to you by provider	1	2	3
Time provider has spent in community	1	2	3
Open space in clinic to wait and talk to other patients	1	2	3
Clinic opened at night	1	2	3
Validated by other community members	1	2	3
Based on a zakat/charity system	1	2	3
Doctor treated family members in the past	1	2	3
Cleanliness of clinic	1	2	3
Price	1	2	3
Clinic separation between men and women	1	2	3
Ethnicity	1	2	3

AP2. What do you think is the ideal time to wait in a clinic? **(SA)**
Time…….
AP3. What do you think is the ideal time to wait in a Hospital? **(SA)**
Time…….

Thank You!

I endorse that I have taken this interview based on the provided instructions and in accordance with marketing research survey rules and regulations. Furthermore, the respondent was not known to me in any capacity	Signature of interviewer: _____	Checked by Supervisor: _____

Interview end time: _____

Appendix B (Qualitative Questionnaire)

Sub topic 1: Introduction to the Community Member:

1. Please tell me about yourself? Your age, education, your occupation:
2. Can you tell your daily routine to me? How do you start your day and how it ends? And what do you do in your spare time?
3. Do you have any hobbies, likes dislikes? What is the most important thing in your life? Why?
4. Please tell me about the important challenges that you face today and past. What problems do you encounter in your life? What issues are you concerned or worried about? And what are the challenges in future?
5. Probe for family size, ages of children, type of family, occupation etc.
6. Please describe your wife to me. His age, level of education, does he work type of marriage (cousin marriage, Bride exchange-watta satta, early marriage)
7. Can you tell me how decisions about your family are made? What sorts of decisions does your wife make? What sorts of decisions do you make? What sorts of decisions do you make together?
8. Please tell me about your friends, who are important in your life. (Friends from anywhere, peer group, co-workers, relatives, neighbors) Who do you discuss personal or sensitive matters with?

Sub topic 2: Sources of Communication of Health Information:

9. What are the some sorts of media you use for communication? TV, Radio, Mobile, newspaper, word of mouth, other:
10. Where do you get important information about health? Is this information easily accessible?
11. What source of information do you trust most? Why? Who do you admire in your community? Why?

Sub topic 3: Current Patterns of Health-seeking Behavior for Mother and Child Health:

12. Any obstacles or challenges do you faced in making the decision to seek healthcare for wife or your child? What are they?
13. How often does your wife or your child fall sick?
14. What are the common health problems you or your child face?
15. What are some of the most recent problems that you or your child had? What did you do when you discovered that you or your child was not feeling well? (Tell me the whole story)

16. How you took your decision and who were the influencers? From where did you have information and where did you go to seek healthcare? What was your experience with the healthcare provider and why did you choose that method? Please tell me whole story. (Probe for full scenario)
17. What were the advantages and disadvantages in your mind when you were deciding to go to provider of healthcare you ultimately went to?
18. Whose duty is the provision of healthcare in a community?

Sub topic 4: Quality of Healthcare:

19. How would you define the meaning of the quality of healthcare (what do you consider is quality)? What are the components of Quality of healthcare?
20. What is lacking in the current healthcare providers in terms of quality of healthcare?

Sub topic 5: Willingness to Pay and Current Health Expenditure:

21. How much do you currently spend per month on healthcare?
22. What are the biggest expenditures within health?
23. How much do you pay per visit to your preferred health provider that you just talked about?
24. How do you feel about paying this much?
25. What do you think is a fair price to pay per visit if you were given the services that you desire, the ones you just mentioned above?
26. Would you be open to paying a fixed amount every month for unlimited health visits to a local health provider of your choice?
27. Around what would that fixed amount be?
28. Describe the best experience you have had so far in seeking healthcare for yourself of your child? How much would you be willing to pay for such an experience on a consistent basis, whenever you are in need?

Appendix C: Maps and Pictures

Map of Households Surveyed

Formal Facility in Community

Informal Facility in Community

Gulshan-e-Sikandarabad Colony

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