CREB Policy Paper No. 01-19

Utilization of Health Microinsurance in Punjab: Insights from Administrative Data

Sadia Hussain
Hamna Ahmed

Centre for Research in Economics & Business
Lahore School of Economics

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Preface

The Centre for Research in Economics and Business (CREB) was established in 2007 to conduct policy-oriented research with a rigorous academic perspective on key development issues facing Pakistan. In addition, CREB (i) facilitates and coordinates research by faculty at the Lahore School of Economics, (ii) hosts visiting international scholars undertaking research on Pakistan, and (iii) administers the Lahore School's postgraduate program leading to the MPhil and PhD.

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It is hoped that these papers will promote discussion on the subject and contribute to a better understanding of economic and business processes and development issues in Pakistan. Comments and feedback on these papers are welcome.

Acknowledgments

We are extremely grateful to Kashf Foundation for their indispensable support and assistance in carrying out this research. The research team is also thankful to Dr. Shahid Amjad Chaudhary, Rector, Lahore School of Economics and Dr. Naved Hamid, Director, Centre for Research in Economics and Business for facilitating our research endeavors.

Abstract

We study dominant trends and potential determinants of use of a health microinsurance program, offered by a leading microfinance institution (MFI) in Punjab, Pakistan. We find that: (1) Women are the most active users of the program with a major focus on seeking health care for maternal and gynaecological conditions (2) Extending the program offers benefits to the MFI; observed as higher retention and lower drop-out rates in the credit program (3) Supply side factors; distance and dearth of listed hospitals, constrain utilization of the health microinsurance program (4) Program utilization is higher in areas with lower levels of public health infrastructure, implying the presence of a potential substitution effect between the public and private health care sector.

JEL classifications: G21, G22, I10, I12, I13,

Keywords: Health Microinsurance, Microfinance, Pakistan

1 Introduction

Kashf Foundation is a leading microfinance institution in Pakistan, providing afforadable financial services to low income households since 1996. Kashf Foundation works with an 'all female' client base. Therefore, it's products and services are women centric, aimed at increasing inclusion, productivity and empowerment of women in low income households. Kashf Foundation's services have a wide geographical spread; reaching out to women in urban and peri-urban areas spanning over Punjab, Sindh and Khyber Pakhtunkhwa.

In 2014, Kashf rolled out a health micro insurance program for its clients and their families. The program was initially pilot tested in 18 branches. By 2015, the program was scaled up to include all of Kashf's branches in Punjab and Sindh. Kashf's health micro insurance program is unique on several accounts: (i) *The program is mandatory*: Low take-up rates are an impediment in providing insurance services to the poor in developing countries. As enrollment in this program is mandatory for all women who borrow from Kashf, low take-up rate is not an issue in this context. (ii)*The program provides coverage to low-income households at both the extensive and intensive margin*. With approximately 1.1 million individuals at present, the micro insurance program serves as a safety net for a large population at the extensive margin. At the intensive margin, the program provides health services up to 30K to each member of the family in a nuclear household. With a per family member cap instead of a per family cap, this program has tremendous potential for mitigating gender based rationing of resources within low income households. (iii) *The program offers flexibility as well as ease of use*: Kashf's micro insurance program allows cashless use of health services in empaneled hospitals. In the absence panel hospitals, the program also offers cash reimbursements. Offering a combination of cashless services (where possible) with cash reimbursements the program provides flexibility and easy utilization of health services by women and their families. (iv) *Insurance cover is provided to women and their families*: Since Kashf

Foundation provides financial services only to women, policyholders of the program are females and the benefits extend to the female's nuclear family; spouse and children.

Kashf Foundation is collaborating with Lahore School of Economics to study the social and economic effects of the health micro insurance program using administrative data on clients and their health claims filed between 2014 to 2017 in Punjab. In this brief, we will analyze dominants trends and potential determinants of using the health microinsurance program. Section 1 provides an overview of how program utilization has evolved over time and across districts as well as a brief profile of users. In Section 2, we discuss branch and district specific factors that may help in understanding differential patterns of program use. Section 3 examines likely benefit of the health microinsurance program for the microfinance institution, while Section 4 provides a conclusion of our main findings.

2 Outreach of the Health Microinsurance Program

The objective of this section is to study the main patterns of program usage that have emerged since its inception in 2014. This section will help us to (i) understand how program usage has fared over time (ii) obtain a profile of program users by gender, age, and loan history (iii) determine the most common causes of hospitalization amongst program users over the study period, and (iv) identify districts where usage is most and least concentrated.

2.1 How does utilization of the program evolve over time?

Outreach of the program to women (and family members) from a low income background has increased over time: Program utilization is defined as the ratio of women who use the health

microinsurance program at least once during a given year(claimants)[1]. Figure 1 shows program utilization on an annual basis[2]. Introduction of the bundled package (credit plus insurance) is accompanied with a rapid growth in client base; from around 25,000 borrowers in 2014 (across 18 branches) to approximately 200,000 borrowers in 2015 (across 175 branches). While there is a positive correlation between the two, it is not sure whether the growth in client base is *caused* by introduction of the bundled package or by another factor. During 2014-15, claimants increase at a lower rate than borrowers. Therefore, program utilization is slightly lower in 2015 relative to 2014.

After 2015, the number of borrowers remained more or less stable, but claimants increased. As a result, program utilization increased from approximately 4 percent in 2014-15 to 6 percent in 2016-17. This is higher than the average rate of hospitalization in public hospitals at the provincial level, equal to 3.8 percent in 2014.[3]Thus utilization of health services is higher amongst Kashf borrowers relative to utilization of public health facilities in the overall population and this outreach seems to be expanding with time. Since Kashf's health microinsurance program provides coverage in private (and not

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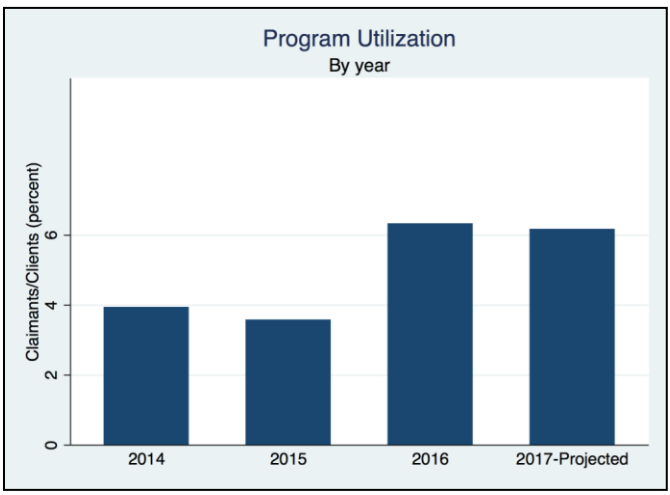
[1] Claimants include women who use the program, either for themselves or for family members during a given year. Those who make multiple claims in a given year are counted only once as a percentage of total women borrowers.

[2] Data for 2017 is from January - June. Therefore, we use growth rate of claimants and clients between 2015 to 2016 to project data for July-December 2017.

[3] Data on indoor admissions is taken from the Annual Report of Health Department, Policy and Strategic Planning Unit (2014). It includes admissions in Tehsil Head Quarter, District Health Quarter and teaching hospitals because primary health care providers such as BHUs, RHUs, MNCH Centers and dispensaries do not offer hospitalisation. Data on Punjab population has been taken from Statistical Pocketbook of the Punjab by Bureau of Statistics (2014).}

public) facilities only, one possible explanation of higher utilization amongst Kashf borrowers may be that they perceive the former to be of a superior quality. Higher utilization may also signify pent-up demand amongst borrowers. The program may have helped in reducing high out-of-pocket expenditures which would otherwise be incurred when seeking treatment in private hospitals, thereby easing access to health services in Punjab.

Figure 1



2.2 What is the profile of borrowers and microinsurance program users?

2.2.1 By gender

Women followed by children are the most, while men are the least active users of the program: Figure 2 disaggregates total claims by gender and type of user across all years. Consistently, around 55 percent of the claimants utilized the program for themselves and 10 percent for their daughters. Women not only use the program twice as much as their husbands, but on average, also

spend more per hospitalization. While this difference is small relative to the difference in program utilization, it is statistically significant at 1 percent (See Figure 2). The smaller difference in average expenditure per claimant may indicate that usage by husbands is typically for complicated medical conditions, for which treatment is costlier than that for women. We also observe that average expenditure per claim is lower for children relative to adults. In part, this may be due to health treatment of varying intensity and cost across different age brackets(See Figure 3).

Women exhibit a son preference in use of the health insurance program: This is shown both by a higher percentage of claims made for sons as well as a higher average claim amount for sons relative to daughters (Figure 3)

Figure 2

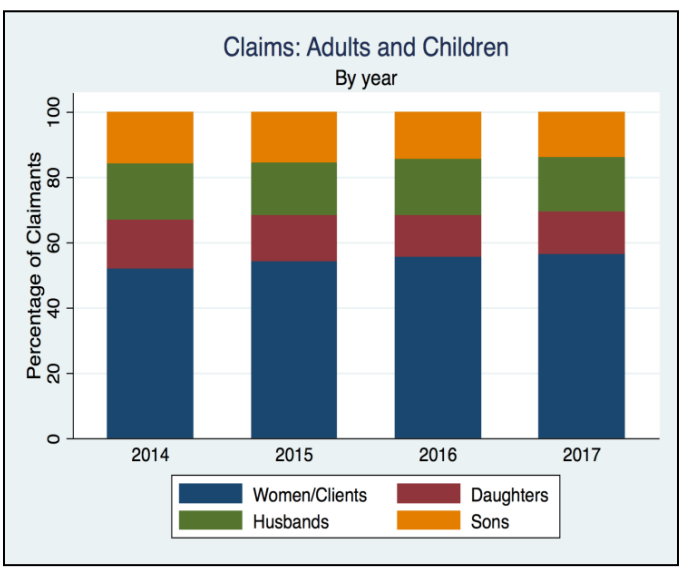
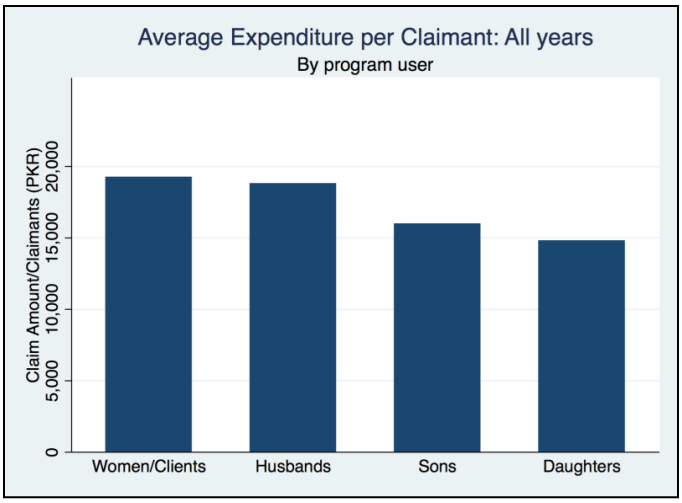


Figure 3

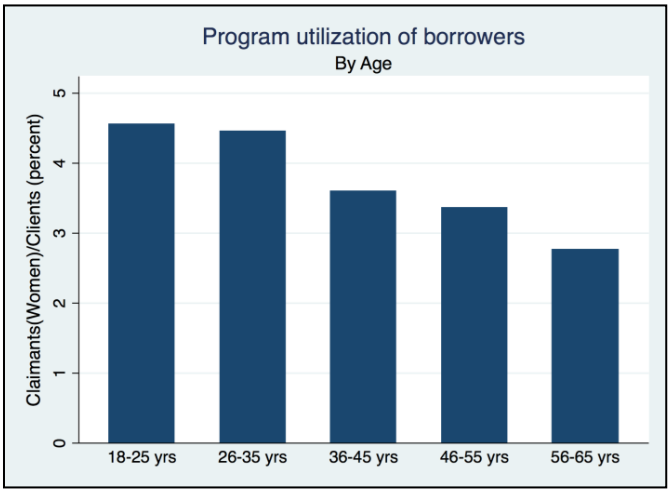


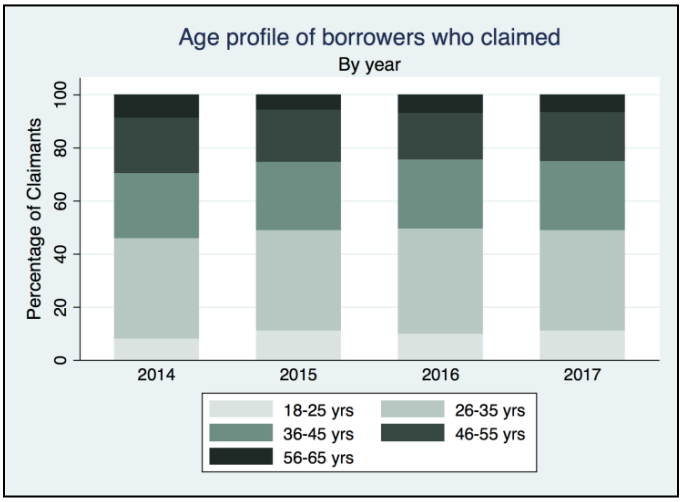
2.2.2 By Age

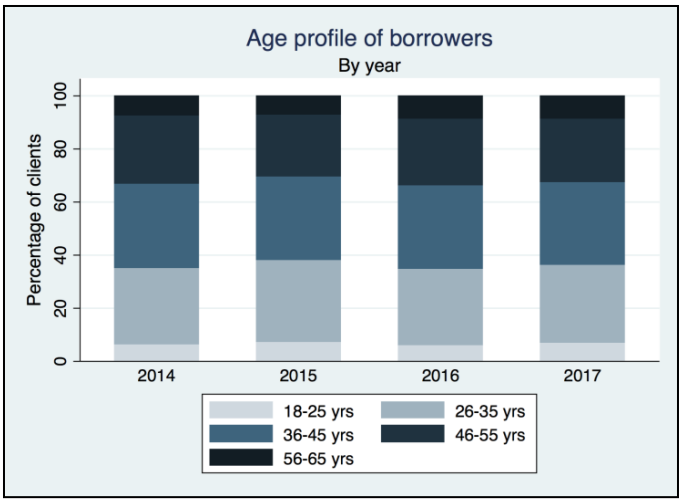
Program utilization is highest amongst women between 18-35 years of age as shown in the first graph of Figure 4. Claims filed by women in this age bracket comprise approximately 50 percent of all claims made over the study period (second graph in Figure 4).

The client base of borrowers does not show a compositional change since the introduction of the program, as shown in the second graph of (Figure 4). In contrast to the often cited problem of adverse selection and the subsequent concerns about sustainability of insurance programs, the ratio of borrowers across various age brackets does not change over time. A consisent composition of the client base across all years indicates that women with poor health status (or relatively higher health needs) are not necessarily self-selecting themselves into borrowing from Kashf.

Figure 4


Program utilization of borrowers
By Age
Claimants(Women)/Clients (percent)
0
1
2
3
4
5
18-25 yrs
26-35 yrs
36-45 yrs
46-55 yrs
56-65 yrs


Age profile of borrowers who claimed
By year
Percentage of Claimants
0
20
40
60
80
100
2014
2015
2016
2017
18-25 yrs
26-35 yrs
36-45 yrs
46-55 yrs
56-65 yrs



2.2.3 By loan history of borrowers

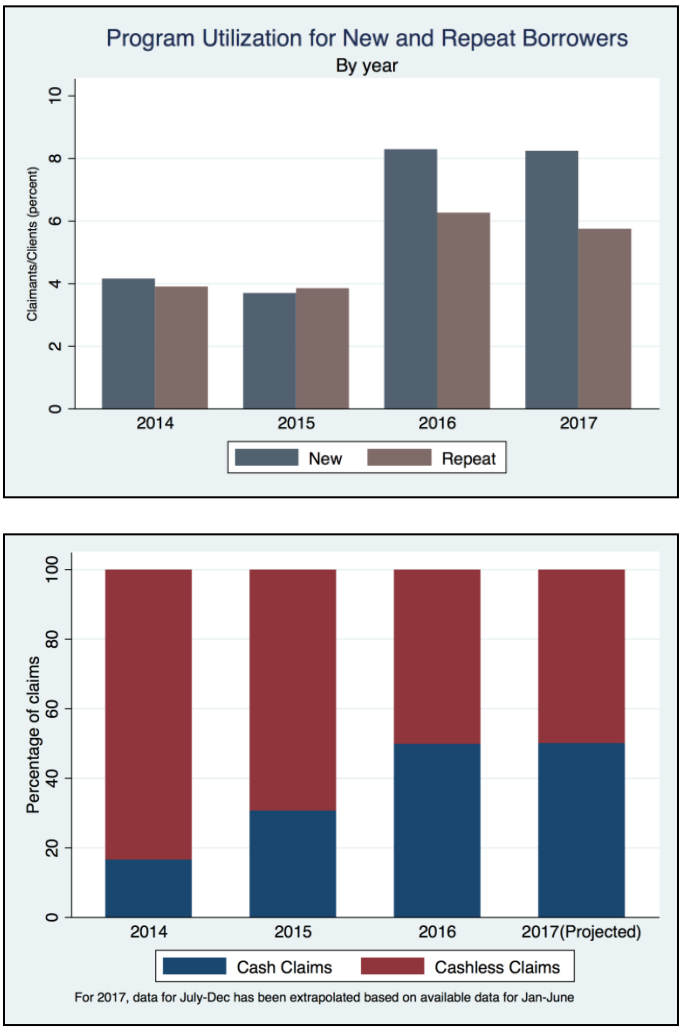
Program utilization is higher amongst new relative to repeat borrowers, as shown in (Figure 5). In 2014, the program was pilot tested and a full scale up occured in 2015. Initially, program utilization was slightly higher amongst repeat borrowers. Repeat borrowers most probably had greater familiarity, information and know-how about program use. In 2016, as Kashf expanded outreach of credit services to new districts, a dramatic increase in program utilization occured amongst new borrowers[4]. In part, this may indicate pent up demand amongst low income households, following high out of pocket costs and constrained access to health services before the program. We also observe growth in cash reimbursements over the same time period (Figure 5). The flexibility of availing services in non-empanelled hospitals may partly explain increase in program utilization, particularly in areas where Kashf recently expanded its operations.

Between 2015-16, the ratio of repeat borrowers increased, as shown in the third graph of (Figure 5): Comparing composition of borrowers in 2015 and 2016, we observe an increase in repeat relative to new

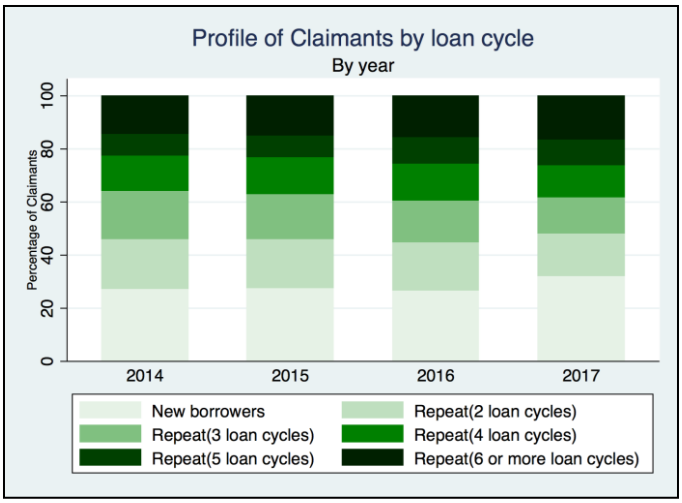
[4] Data for 2017 is for the months January-June

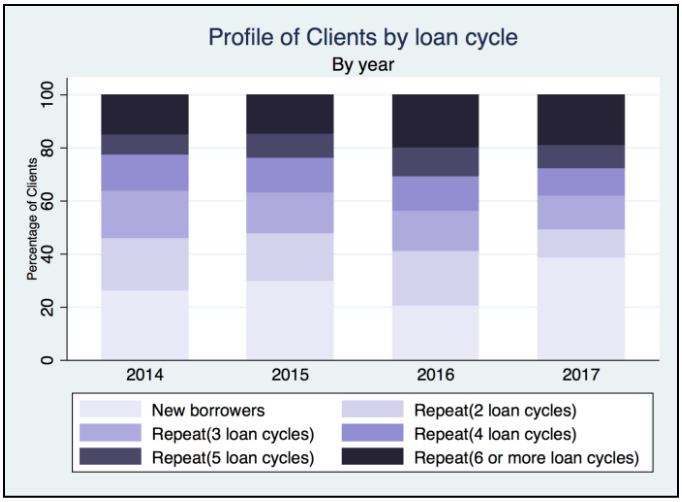
borrowers[5]. This may be due to greater levels of trust in Kashf culminating in renewal of loan contracts.

Figure 5



[5] 2014 is a pilot year, while data for 2017 is for the months January -June, so we are cautious in deriving any inferences from this data





2.3 What are the main reasons for hospitalization amongst insurees?

Gastrointestinal, gynecological and respiratory diseases[6] *are the most common reasons for hospitalization*: We categorize total claims between

[6] Respiratory diseases include respiratory infections as well as fever due to mosquito bite or other air-borne diseases.

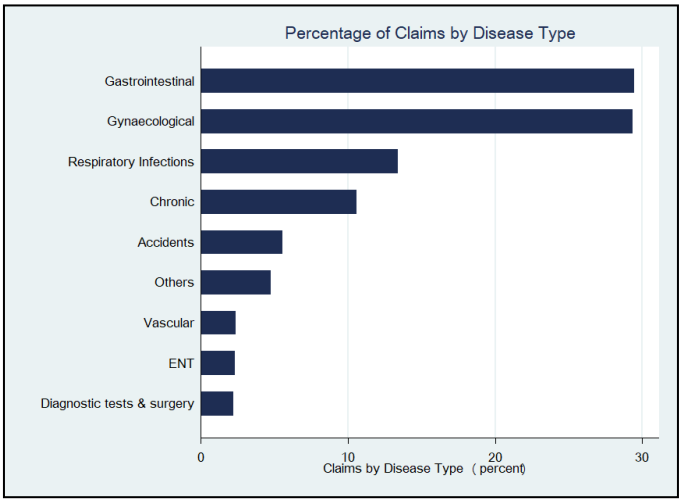
2014-17 according to the medical condition for which borrowers or their family members availed hospitalization (Figure 6). Together, these three categories explain around 70 percent of total claims filed between 2014-17. Another 10 percent of the claims are explained by chronic medical conditions pertaining to kidney, heart, liver and pancreas. A large percentage of gynecological claims is understable given women are the most active users of the program. A high incidence of treatment for gastrointestinal and respiratory problems amongst Kashf borrowers is corroborated by data from the Demographic Health Survey (2015) which reports these two diseases to be most prevalent in Punjab.

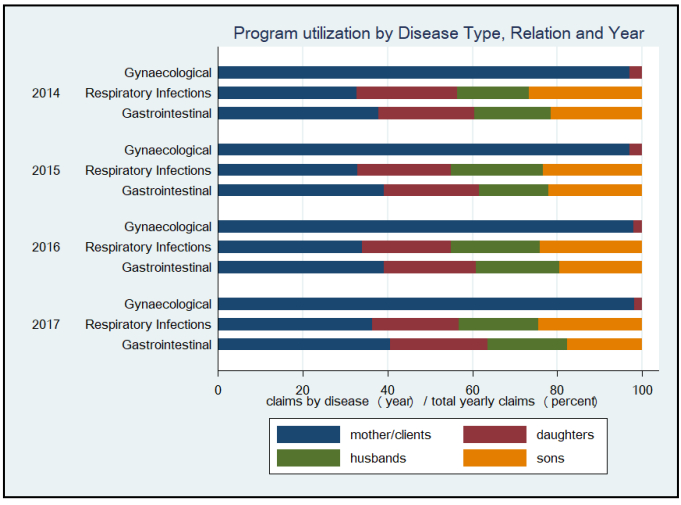
Program utilization by women is mainly for gyneocological conditions while their family members (husband and children) typically use the program for treating gastrointestinal diseases, as shown in the second graph of (Figure 6). Around 10 percent of the gyneocological claims are for cesarean deliveries, while the rest have been used for the treatment of other gynae-related conditions such as amenorrhea, hysterectomy, leiomyoma of the uterus etc. High program utilization amongst women, for gyneocological conditions, holds promise for improving maternal and child health indicators, which are chronically low in Pakistan. Since the program provides coverage for caesarean deliveries only, one potential concern is an unnecessary increase in C-section deliveries. According to DHIS annual report (2014, 2015) caesarean sections (in public health facilities) as a percentage of total births in Punjab was equal to 18 percent (in 2014) and 15 percent (in 2015)[7]. Amongst the population of Kashf borrowers, we identify women who gave birth using birth year of client's children. Delivery claims as a percentage of total women who gave birth is equal to 7 percent and 10 percent in 2015 and 2016 respectively[8]. A lower rate compared to the provincial average suggests that the program has not led to a dramatic rise in c-sections or a misuse of the program.

[7] The most recent provincial estimate of caesarean rate is available for 2015

[8] Data for 2017 is only for Jan-June. For this period, caesarean rate is equal to 5 percent

Figure 6


Percentage of Claims by Disease Type
Gastrointestinal
Gynaecological
Respiratory Infections
Chronic
Accidents
Others
Vascular
ENT
Diagnostic tests & surgery
0
10
20
30
Claims by Disease Type (percent)


Program utilization by Disease Type, Relation and Year
2014
2015
2016
2017
Gynaecological
Respiratory Infections
Gastrointestinal
0
20
40
60
80
100
claims by disease (year) / total yearly claims (percent)
mother/clients
daughters
husbands
sons

2.4 What kind of regional patterns can be observed in program utilization?

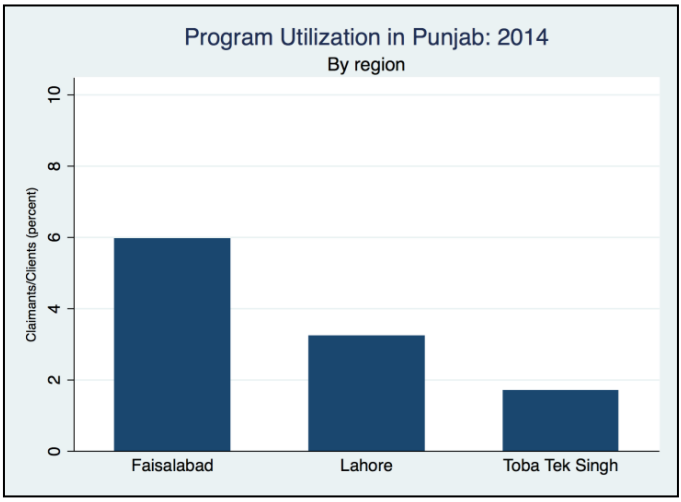
Program utilization is most concentrated in districts of Lodhran, Faisalabad, Okara and Khushab: Since 2015, these four districts remain within the top 5 in terms of program utilization (Figure 7)[9]. Collectively, these districts account for approximately 40 percent of all claims made since the program's inception in 2014. While program use is most concentrated, average expenditure per claimant is lowest in these districts (i.e. Lodhran, Okara, and Faisalabad), approximately equal to PKR 14000 (Figure 7). Apart from these high concentration districts, the Lahore-Sheikhupura-Gujranwala-Gujrat belt constituted 24 percent of total claims over the study period.

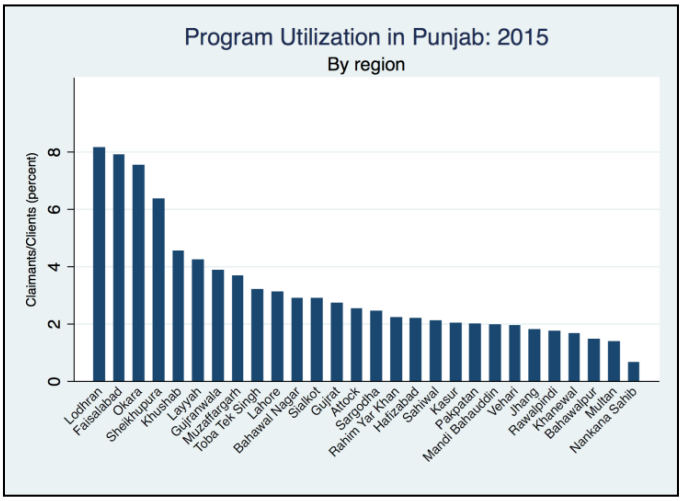
Program utilization is least concentrated in Nankana Sahib, Narowal, Bahawalnagar, Mandi Bahauddin, and Toba Tek Singh. Collectively these districts account for only 3.8 percent of total claims made between 2014-17. Low utilization in some other districts like Mianwali, Bhakkar, DG Khan and Jhelum is because Kashf recently expanded operations to these regions; i.e. in 2017.

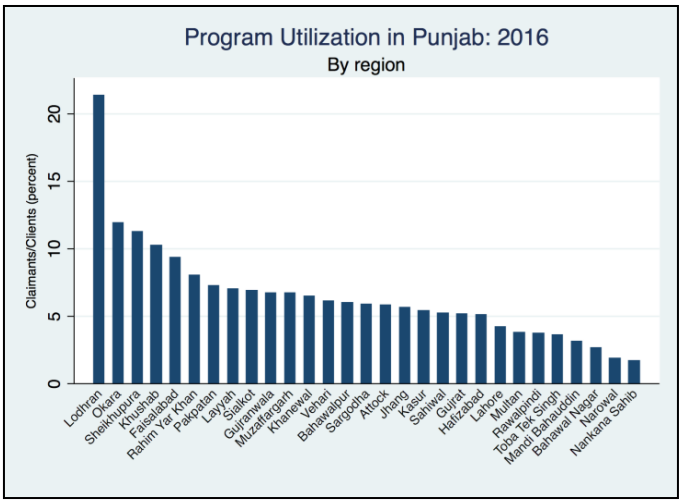
Geographical differences in program utilization could be due to **supply** factors; availability of hospitals and differential pricing, **demand** factors; variation in disease incidence, and **managerial** factors; effective disemination of program information to borrowers.

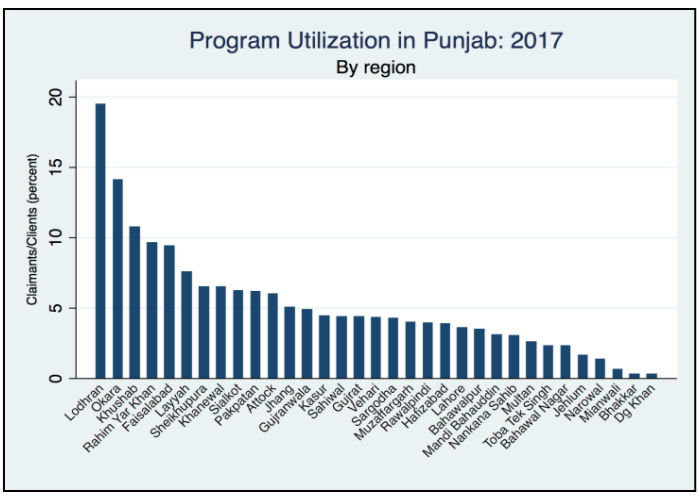
[9] Program utilization is equal to the ratio of women who use the health microinsurance program **claimants** as a percentage of total women borrowers **clients**

Figure 7


Program Utilization in Punjab: 2014
By region
Claimants/Clients (percent)
0
2
4
6
8
10
Faisalabad
Lahore
Toba Tek Singh


Program Utilization in Punjab: 2015
By region
Claimants/Clients (percent)
0
2
4
6
8
Lodhran
Faisalabad
Okara
Sheikhupura
Khushab
Layyah
Gujranwala
Muzaffargarh
Toba Tek Singh
Lahore
Bahawal Nagar
Sialkot
Gujrat
Attock
Sargodha
Rahim Yar Khan
Hafizabad
Sahiwal
Kasur
Pakpatan
Mandi Bahauddin
Vehari
Jhang
Rawalpindi
Khanewal
Bahawalpur
Multan
Nankana Sahib





3 Determinants of program utilization

In this section, we study potential determinants that may explain varying levels of program utilization. We categorize determinants into two categories; (i) internal or branch specific factors (like branch maturity, panel hospital availability, distance from branch to panel hospitals) and (ii) external or district specific factors

(such as availability and quality of public health infrastructure, as well as the prevalent disease environment).

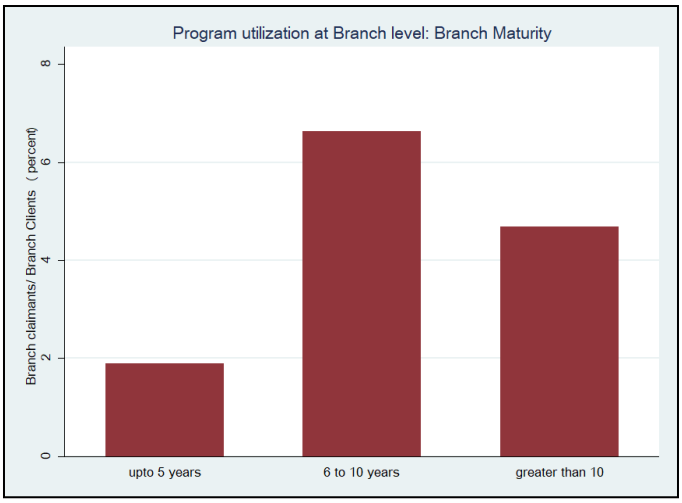
3.1 Branch specific factors

3.1.1 Branch maturity

Average program utilization increases with branch maturity until a certain threshold, after which it decreases as shown in (Figure 8): Program utilization is defined at the branch level as: percentage of borrowers (i.e. women) who use the program at least once in a given year, either for themselves or for a family member. Branch maturity measures age of the branch as measured by number of years since it was first incorporated. Branches are categorized into those that are upto 5 years of age, 6 to 10 years old and greater than 10 years[10]. We observe an inverted U-shaped relationship between program utilization with respect to branch age. This could be because, over time, Development Officers (BDOs) gain experience and expertise to effectively disseminate relevant information to borrowers. A lower average rate of program utilization in branches more than a decade old may be because of supply side administrative and managerial inefficiencies.

Figure 8

[10] The average branch age is 8 years

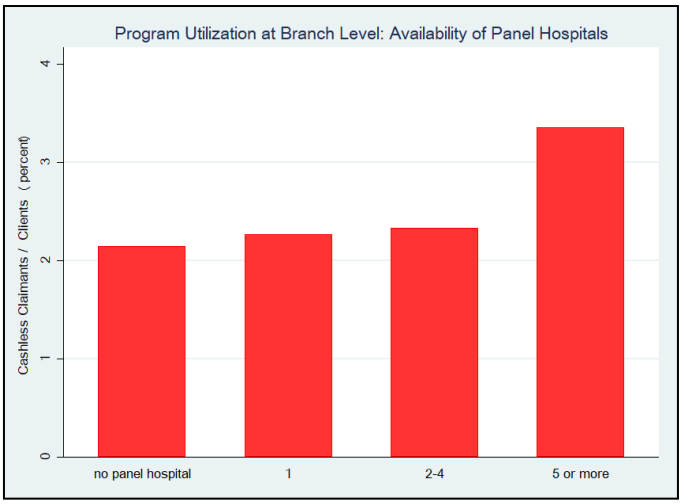


3.1.2 Availability of panel hospitals

Average program utilization of cashless claims is higher in branches with a dense network of panel hospitals, as shown in (Figure 9). Program utilization is defined as percentage of borrowers (i.e. women) who file a cashless claim at least once in a given year, either for themselves or for a family member. Branches are grouped 4 categories; those that have no panel hospital in close vicinity[11], 1 panel hospital, between 2 and 4 panel hospitals and those that have 5 or more panel hospitals. Clients avail services in empanelled facilities even when their branch is not served by a panel facility, probably showing treatment availed in panel hospitals from other areas. Policy focus on increasing the network of Kashf panel hospitals may help in promoting utilization of the program.

Figure 9

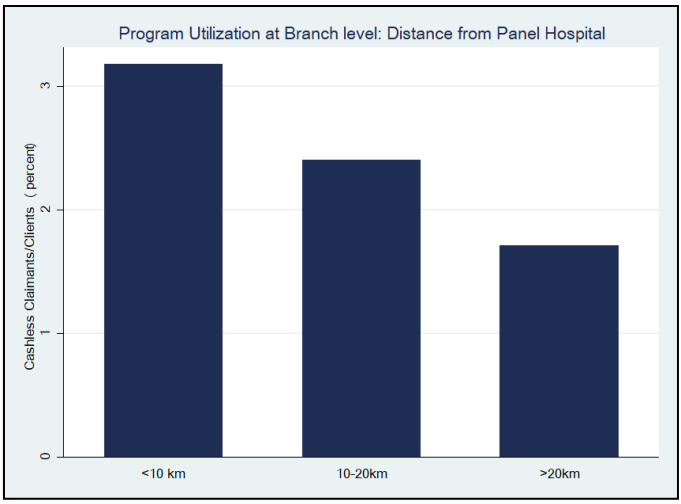
[11] A quarter of branches fall in this category



3.1.3 Distance from panel hospitals

Distance between Kashf branch and panel hospitals is a strong determinant of utilization of cashless claims: We explore the relationship between percentage of cashless claims at the branch level against distance between Kashf branch and panel hospitals (Figure 10). The average distance in the sample is around 10 kilometers. Majority of the cashless claims are concentrated in areas where panel hospitals lay within the mean distance from the branch. Beyond the mean distance, we observe a significant drop in the proportion of cashless claims. Logically, we expect distance to be a decisive factor in using hospitalization services either in the case of birth delivery or other medical reasons. From a policy perspective, this may suggest that increasing the network of panel facilities that are within reachable distance of insurees is imperative to improve utilization of the program.

Figure 10



3.2 District specific factors

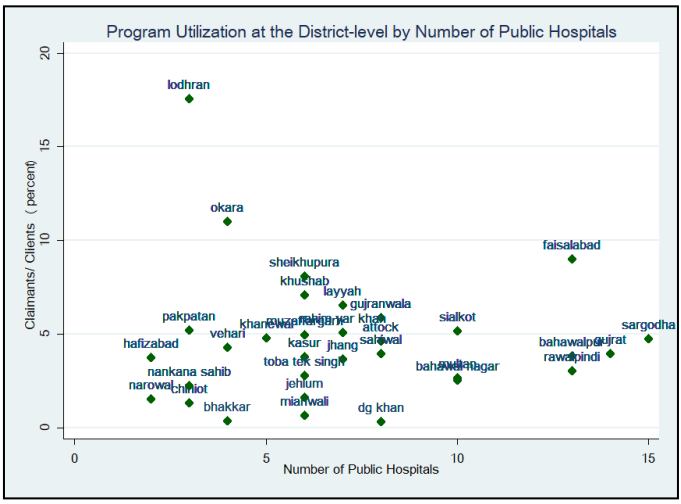
3.2.1 Availability of public health infrastructure

Program utilization is higher in districts with a dearth of public health infrastructure: In (Figure 11), we graph the relationship between number of public hospitals against program utilization at the district-level[12]. The report incorporates data from hospitals at the tehsil level as well as teaching/tertiary care hospitals. We exclude Lahore from our analysis since it is an outlier with fifty public hospitals in its enclosure. A general downward relationship can be observed between availability of public hospitals and utilization of the microinsurance program amongst Kashf borrowers (Figure 11). This may point towards a potential substitution effect between availability of public and private health infrastructure. Districts with a dearth of public hospitals rely more on the program to fulfill their health needs and vice versa. However, a lot of variation can be observed in this

[12] Data for public infrastructure (number and beds per hospital) is obtained from DHIS Annual Report 2015

trend, suggesting that there could be other factors that may also affect program use.

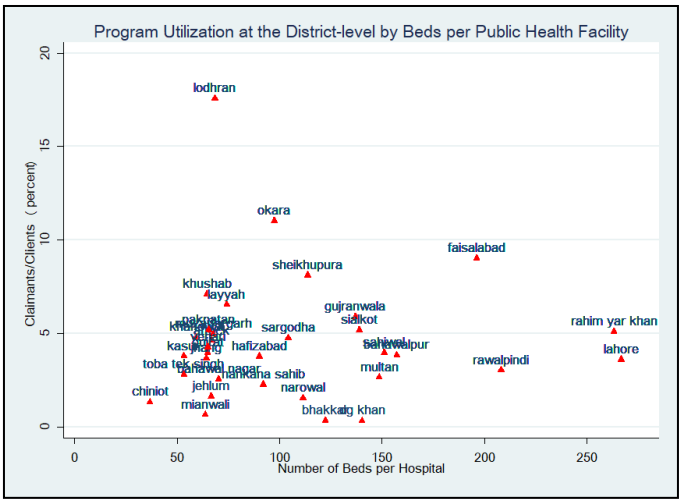
Figure 11



3.2.2 Quality of public health infrastructure

Program utilization is higher in districts with a lower quality of public health infrastructure, as shown in (Figure 12). We use number of beds per public hospital as an indicator for quality and find that the program is used more intensively in districts with lower quality of public hospitals. Again, this is indicative evidence for a potential substitution effect; the quality gap in public healthcare is filled by the private healthcare system.

Figure 12



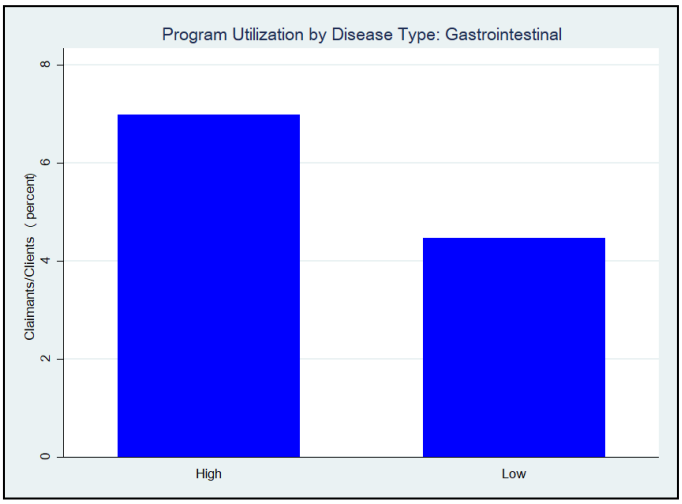
3.2.3 Disease incidence

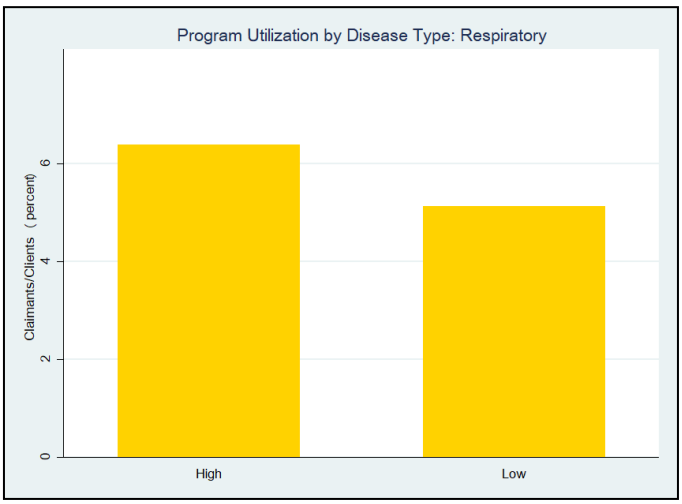
Program utilization is higher in districts with a greater burden of disease, as shown in (Figure 13). We compare district-level disease incidence for gastrointestinal and respiratory diseases with the intensity of usage of the program[13], that reports disease incidence rate as the number of new cases reported within a year over the population at risk, per 1000 individuals. Respiratory infection, peptic ulcers, fever and dysentery are ranked as top four most prevalent diseases in Punjab (Annual Report District Health Information System (DHIS), 2015). For simplicity, respiratory and fever are grouped into respiratory infections while peptic ulcers and dysentery are grouped as gastrointestinal.}. Districts are ranked as "High" (if the incidence is above average) and "Low" (if incidence is below average). We observe a positive relationship; program utilization is higher in districts with greater disease incidence. This may be indicative of a lower quality of air and water, thus driving up the demand for health services in such districts. Note the "High" category includes

[13] Data for disease incidence is taken from District Health Information System (DHIS, 2015)

Faisalabad and Okara where program utilization is the highest. On the other hand, Nankana Sahib and Narowal fall in the "Low" category where program utilization is the lowest. This analysis suggests that insurees have greater health needs, and therefore use the program more intensively in districts with a high disease incidence of disease.

Figure 13

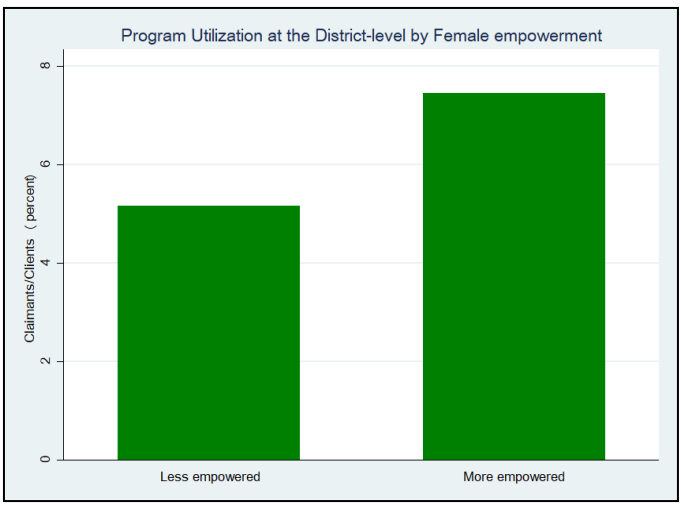




3.2.4 Degree of women empowerment

Program utilization is higher in districts where women are relatively more empowered. Using Demographic Health Survey (DHS 2012-13), we calculate district level ratio of women who report making decisions on health care spending either on their own or in consultation with their spouse. We consider such women as empowered. We find that on average, 64 percent of women report to having a say in health related decisions (See Figure 14). We classify districts as; (i) Low – with less than mean and (ii) High – with more than average level of women empowerment. Program utilization is higher in districts where a relatively larger share of women report to have a say in health related decisions.

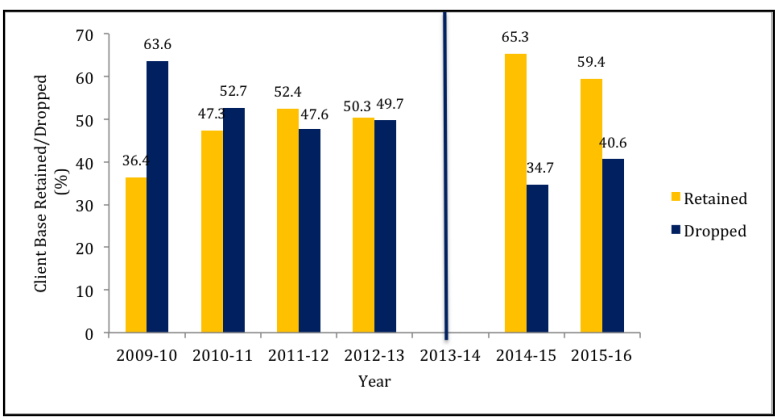
Figure 14



4 Benefit for the microfinance institution

There is an improvement in client retention and reduction in drop-out rates of borrowers since the inception of the health microinsurance program: Ever since the program was rolled out in 2014, average annual dropout rate of Kashf MFI borrowers reduced from an average of 45 percent to around 38 percent (Figure 15). At the same time, average annual retention rate increased from 47 percent (between 2009-13) to 62 percent after the program. Overall, these results suggest that introduction of the bundled package may contribute towards improving sustainability of the MFI by increasing client retention and reducing the likelihood of borrowers dropping out of the credit program.

Figure 15



5 Conclusion

The findings in this brief provide a useful and detailed snapshot of main trends in utilization of the health microinsurance program. The program acts a catalyst in promoting inclusion of

women in the health sector that is marred with limited access to health services for vulnerable groups of the society. Some main conclusions that can be drawn are as follows:

1. *Women are the most active users of the program with a major focus on seeking health care for maternal and gynaecological conditions*. This has implications for improving maternal and child health especially in the context of Pakistan. According to World Bank (2015), Pakistan, has a maternal and infant mortality rate of 200 per 100,000 live births and 79 per 1000 live births respectively, one of the highest in the world. Unlike other South Asian economies, Pakistan has not been able to address these socio-economic challenges till date.

2. *Extending the program also offers immense benefits to Kashf*. We observe an increase in the rate of client retention vis-a-vis lower drop-out rates in the credit program. This implies potential for promoting sustainability for the microfinance institution.

3. *Supply side constraints hamper utilization of health services for females*. We find that physical distance and dearth of panel hospitals are binding constraints for utilization. This may suggest that, as a way forward, focus should be on promoting availability of panel hospitals such that they are within easy reach of insurees.

4. *Program utilization is higher in areas with lower levels of public health infrastructure, implying the presence of a potential substitution effect*. Districts that lack public health infrastructure are associated with greater use of the health insurance program. This may indicate that a future strategy should target on empanelling new hospitals in districts where the quantity and quality of public health infrastructure is low.

We do not establish any cause and effect relationships from findings presented in this brief. For instance, higher rates of program

utilization are observed in districts with greater coverage of panel hospitals. However, empanelment of more private hospitals does not guarantee higher rates of program utilization in those areas. In order to ascertain a causal relationship between the highlighted constraints and program use, a more sophisticated empirical methodology, entailing a randomized control trial (RCT) design would be required.

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Lahore School of Economics
Intersection Main Boulevard Phase VI, DHA and Burki Road,
Burki Lahore 53200, Pakistan