論文の内容の要旨

Abstract of Dissertation

Accessibility to Healthcare Facilities in Developing Nations

(発展途上国における医療施設へのアクセシビリティについて)

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Disparity and inadequate "accessibility to healthcare facilities" is one of the pressing issues that have been a cause of concern in developing countries. Cynicism about the health care system is apparent in most of the fast growing economies, such as India. On one hand social exclusion, financial overburden, and excess travelling are observed, on the other hand, excessive service loading on the regional facilities, low user ship in the local healthcare facility, organic growth of the private facilities and polarization of top-end facilities in the urban areas plague the supply system.

Chronologically, the approach of the policy makers in India has been to provide piecemeal solutions on the simplistic presumption of population catchments and therefore the complexity of the issue has not been dealt with appropriate acumen. For instance, in 1990, the unavailability of healthcare infrastructure was pointed out to be the key area of concern barring accessibility, which later in couple of years shifted focus to lack of health insurance policy. During this phase, policy makers focused on the increase in numbers and to supplement in healthcare infrastructure, encouraged private investment, while neglecting the problems of limited access for many. Due to lack of medical personnel, the public service suffered from low service delivery quality leading to a shift of choice of service provider occurred. With private services being expensive, the absence of insurance policy was soon the point of focus. Historically, budgetary investment in health sector has been low (1.1%, 2010), however, in recent past, exposed to severe criticism, the budgetary allocation has substantially been augmented. Under this tangled purview, it becomes prudent, to channelize the investment in order to internalise the benefits. Hence the goal of this dissertation is to "Enable participation in healthcare activity without dependency, uncertainty and burden", therefore reducing the inaccessibility and exclusion. The objectives therefore are as follows: (1) To device methods for reducing "Do-nothing scenario" and thereby develop a patient cantered policy intervention, (2) To reduce dependency in healthcare seeking tours, and (3) Increase user ship of local Health facilities (HF) – reducing the dependence on the regional healthcare facilities unless referred.

Background

The healthcare seeking behaviour is an outcome of complex decision behaviour, which is not only dependent on the type and seriousness of illness (event) but also on respective endogenous capability and affordability of the healthcare seeker (and his/her family) and exogenous supply scenario. Therefore, it is assumed that variations in the endogenous and exogenous constraints

added on to the complexity and variations in choices differing in service providers, travel patterns and satisfaction. Primarily there are two types of adaptations (1) accumulation of resources to meet the expenses and (2), is a form of dependency, which in turn triggers interaction between household members and households. Failure to adapt and cope up, sometimes lead to undue consequences of giving up health activity i.e., 'to do nothing'.

Data, methods and research flow

To analyse the healthcare seeking behaviour and to propose policy that would be instrumental in improving accessibility, the research framework has been designed to have five steps. First step is to analyse the choice of health seekers and the role of attitudinal parameters on the choice. The second step is to appraise the supply side dynamics for both rural and urban areas. Following the footsteps, the third step was to critically study the role of companions and the possible consequences on healthcare activity, the health seeker and companions. Based on the assumption that satisfaction of the healthcare activity often leads to continued usage of the facility, the fourth step attempts to determine the parameters that lead to higher satisfaction. Assimilating the findings several policies were proposed, which were further modified to generate scenarios. These scenarios were then used to gather feedback from residents. As the fifth step, 'revisit' models were estimated to not only highlight the parameters that lead to the selection of the scenario, but also to capture effects of perception of the transportation system and available healthcare infrastructure.

Two sets of field surveys were conducted. The preliminary survey was aimed to obtain healthcare activity diary in multiple prototype spatial scales, namely, rural, suburban and urban. This data were used in step 2 to step 4. The second field survey targeted two groups of respondents, namely, rural residents and health seekers who came to the regional facility. The main objective of the survey was to figure out the policy scenario that might instigate usage of the local public health care facilities and avoid regional tours without being referred to do so.

Results and discussions

Analysis revealed that there are five choices, while individuals sought for healthcare, such as public providers, private providers, medicine shops, traditional medicine, and consultation with well-wishers. Additionally, the sixth undesired event of 'do-nothing' i.e., avoiding healthcare activity. Based on the segmented logistic regressions, it was observed that as the number of days of illness increased (parameter depicting perceived seriousness); people tend to opt for diagnosed treatment services. The household size did not seem to play a vital role. However, household structure when interacted with education levels, displayed significant impact on choice behaviour. The lesser-educated household did not seem to choose the private services. However, causal models highlighted that previous visit experience to the public healthcare facilities induced the shifting of preference towards private healthcare service providers. Notwithstanding price, sensitivity among poor was observed to be critical and determining. Traditional medical systems run parallel & are chosen by the individuals, for whom faith transcends socio-economic or demographic differences.

The accessibility impedance seemed to be a deterministic parameter in case of utilization of the public facilities irrespective of socioeconomic classes. Unavailability of certain services or public facility as a whole, and lack of service delivery quality induced tendencies of leapfrogging to regional

multi-speciality facilities. The weaker section of the rural India seemed to suffer the most, in addition to economic constraints, the location of the houses were in the interior parts of agricultural lands which were not connected by all-weather roads and mostly non-negotiable using four wheelers, therefore, connectivity is a major cause of concern as well. This throws light not only on the gap between the rhetoric and reality but also on the framework within which the policies have been formulated; the network connectivity and the persevering infrastructure drawbacks affected accessibility largely.

We analysed both rural and urban health care facility and service delivery system. The polarization of the facilities is evident in the urban areas whereas there are considerable amount of gap in terms of supply in the rural settings. The analysis of the rural areas highlighted the need for all-weather connectivity (road and physical network). Additionally it was evident that there is a need to increase the service delivery capability in the rural HFs. The urban areas on contrary are less susceptible to the issues of availability; instead, there is plethora of choices. Considering topography and land cover inclusive of population density catchments, the analysis revealed that considerable amount of the catchment populations were not covered. We identified gap in terms of supply, when the catchment is delineated in terms of mobility impedances (modes available, current usage of public transportation system and life style of the residents). The research findings suggest that considerable improvement of service catchment is possible with increase in operation time and improvement of service window followed by augmentation of physical infrastructure.

The disaggregated level analysis of the revealed preferences of the health seekers exhibited occurrence of detouring of the neighbourhood facility (both public and private) and traveling beyond district boundary at times. Therefore, analysis of the supply scenario alone is incapable of ensuring accessibility, so psychometric analysis of the demand side was assumed to hold the key.

Based on the determined endogenous and exogenous constraints, people adapt and thereafter engage in healthcare activity. Diversified household structure and respective social networks played critical role in the interaction and collaborated during health tours. Household members, relative, friends, neighbour and community have different roles and assists in form of different supports. Although companionship is mostly featured as 'altruism', detailed survey and analysis revealed several purposes. Segmented causal models exhibited that in general, companions play support in terms of information, accompaniment and in travel, but in case of regional tours, support in terms of refuge is highly sought after. Furthermore, the models showed that increased companionship resulted in higher satisfaction of the health seekers. On the contrary, economic loss (wage loss) due to companionship is an unwanted effect, which was significant in case of the poor. Therefore, although companionship ensured higher satisfaction, but dependency (when support in terms of refuge and companions becomes decisive factor) critically affected the healthcare activity itself.

While availability does not ensure usage, but satisfaction of the health activity ensures continued usage, the dimensions that affected satisfaction levels were critically determined. This dissertation explored the variation in the satisfaction of patients availing different HFs for outpatient needs to formulate strategies to upgrade of the existing public HFs sensitive to people's capability and attitude (tailored solution depending on local needs) to improve user ship and reduce regional tours. Multi-level ordered probit models were estimated to determine parameters that have positive

and significant effects on satisfaction levels. Parameters such as healthcare facilities having modern services, referred facilities and those on the route to the daily activity were positive and statistically significant.

Four major policies that were proposed were based on the integrated findings of the preceding steps. Firstly, upgrade of the healthcare facility, housing required medical and diagnostic tools together with availability of healthcare personnel and medicines. Secondly, setting up of telemedicine to make referral system easy. Thirdly, provision of free transportation (if the local health care facility deemed necessary to refer the patient to regional to other facilities). Finally, development of healthcare emergency system to reduce uncertainty. These policies were then presented singular or in combination to the study groups.

Integrated choice and latent variable models were estimated to elucidate the importance of the psychometric variables depicting the gaps in available health infrastructure and travel condition in tandem to the choice of the scenarios. Furthermore, perception based assessment could be instrumental in developing the tailored solution that can instigate 'revisit' and might be an appropriate approach towards reducing inaccessibility and channelize benefits to all.

Conclusion

The research focused on estimating the accessibility impedances and adaptations that one undertakes to engage in healthcare seeking activity. The research analysed the choice of healthcare service providers in terms of public and private facilities. Furthermore, role of certain psychometric parameters such as perception, attitude, and self-belief on the engagement of the activity itself were determined. Satisfaction derived from the activity has been stressed upon, as it might be an indicator of continued usage. Based on the results, four policy scenarios were designed to counter inaccessibility. These four scenarios were then appraised to determine the revisit decision of the end users to justify the applicability of the scenarios, targeting location specific or facility specific objectives.