SABITA
A Journal of Humanities

Journal Homepage: www.sabitajournal.com

Article

Mobile Telephony and the Contemporary Rural Society in West Bengal with special reference to Health and Economic Sector

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Keywords:
Mobile Telephony, Rural Society, West Bengal, Economic Benefits, Healthcare Delivery, Community Health Workers, Mobile Penetration, Socio-Economic Development.

ABSTRACT

This article explores the role of mobile telephony in shaping contemporary rural society in West Bengal, with a focus on the health and economic sectors. The steady rise in mobile phone usage has transformed communication patterns, bridging gaps between rural and urban populations. The study highlights the significant increase in mobile penetration, particularly in addressing health and economic challenges. Through empirical evidence, it reveals how mobile phones empower small-scale traders, entrepreneurs, and farmers by providing access to critical market information, enhancing business expansion, and enabling online sales. Moreover, the article underscores the potential of mobile technology to revolutionise healthcare delivery in rural areas. Community health workers equipped with mobile communication tools can offer essential initial care, consult medical experts, and facilitate timely ambulance services. This intervention holds promise for addressing healthcare disparities in remote regions. By analysing mobile telephony's economic and health benefits, this paper emphasises its transformative potential in driving socio-economic development and improving healthcare outcomes in rural West Bengal.

Introduction

A trend that has been noticed since the recent past, and has been reported by different scholars, is the steady replacement of fixed landline phones by mobile phones. Across different Indian cities and regions, popularity of mobile phones has risen steadily. While regional differences exist in regards to use of smart phone vis-a-vis normal models, what cannot be denied is that use of mobile phones has increased significantly. India's mobile subscriber base was computed at 919 million till close of March 2012 (Londhe et al, 2014). Almost 61% of internet usage time is spent on mobile phones in India, now (We are Social &Hootsuite, 2022).Given this quantum of mobile user base, it is not surprising that India ranked as the second largest market for mobile phones globally. China, with a population figure more than India, ranked as the largest global market for mobile phones (Londhe et al, 2014). The rising use of mobiles by Indian can be evaluated from the perspective of teledensity also. Londhe et al (2014) defines teledensity as the number of mobile phones that is in use among every 100 individuals. Mehta (2013) informs about six times rise in teledensity between 2006 and 2013. While teledensity was computed at 13% during March 2006, it rose to a significant 75% by the end of March 2013. And as per the latest data the rural teledensity is 56.28 (TRAI 2018). This rise can be attributed to **two reasons**. First is the strong penetration of mobile usage across urban centers of the country. Second is the adoption of mobile phones across rural India. With falling prices of handsets, tariff rates and hardware the price sensitive rural markets are fast adapting to mobile use (Mehta 2013). Reflection of this trend can be found in comparative teledensity figures pertaining to rural India. While only about 2 people, in every 100, used mobiles in 2005, by the end of March 2012 about 38 mobile users were identified among every 100 people. Thus, within a gap of seven years, rural teledensity witnessed a jump of 36% (TRAI 2012).

Islam (2011) points out that mobile telephony has achieved a unique status, which fixed landline phones never managed too. Put in another way, utilities derived from mobiles outweighed the same for landline phones and therefore has been widely accepted. It is today considered as a potential medium for bringing about significant socio-economic progress, particularly across rural India (Islam 2011). As per Census 2011 data, 69% of the national population resides in rural areas (Census 2011). It is known that such people do not have adequate access to healthcare, knowledge and awareness, infrastructure and education. Mobile is capable of filling the gap, becoming the bridge for deliverance of the latter and is therefore considered a crucial developmental tool. Additionally, it can balance divide between rural and urban India, which can further consolidate socio-economic progress. Exchange of information, which mobiles enable, can create greater degree of awareness necessary for precise decision making. Learning, with the population, will enhance having positive effect on healthcare and other sectors (Mehta 2013). Case in point are Asian and Sub-Saharan countries where mobiles are being used for developing social capital which subsequently manifests via greater scope of economic progress, higher frequency of political evolution and wider networking within society (Londhe et al, 2014).

It seems that rural India is adapting to mobiles at a speedy rate. Subscriber numbers are rising, detectable from the thickening teledensity. This trend is encouraging for it can usher in a new level of, and path to, socio-economic development of rural India. And mobile phones can become the medium which can make such development sustainable and all

inclusive. By being permissive of exchange of information and learning, mobiles can nurture flourishment of awareness about issues like health and economic well-being. This perspective is examined, in the context of West Bengal in this paper. A holistic discussion is herein presented outlining the impact of mobiles among rural areas of West Bengal. Such assessment can aid comprehension about practical outcome of the above positioning in this state. By focusing specially on health and economic perspective, this paper traces the level of utilization of mobiles to bring health and economic benefits to rural populace of West Bengal.

Mobile telephony in rural West Bengal

By 1999-2000 presence of mobile telephony was noticeable across different urban centers of India. Popularity of internet was also on the rise, though it was not being widely surfed from mobile phones but was done from cyber cafes (Tenhunen 2008). Even though urban centers were starting to catch up with this new technological offering, rural areas of West Bengal displayed no such inclination. Large parts of rural Bengal had no access to electricity or even fixed landline phones. The first mobile network was set up by the national government owned Bharat Sanchar Nigam Limited in 2002 with the aim of bringing as many rural districts as possible under the coverage of mobile network. This proved to be an important milestone and within the next five years, penetration of mobile network across rural Bengal gathered pace. By 2007 almost all private operators started offering their services across Bengal's villages leading to adoption of this technology by the populace (Tenhunen 2008).

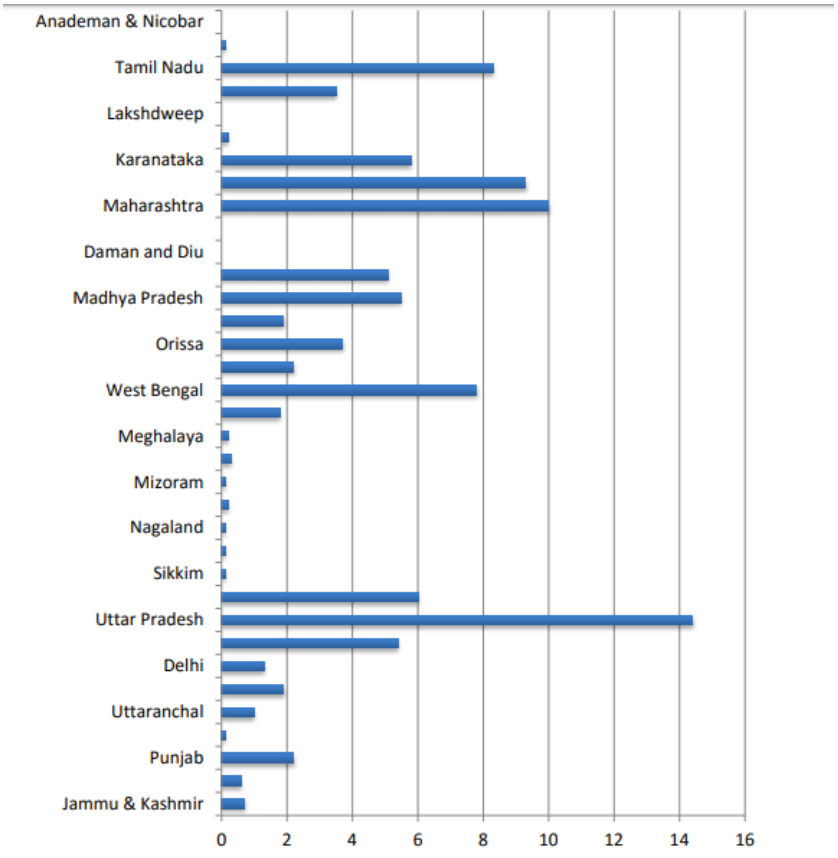

Figure 1: State wise distribution of mobile ownership
Source: TRAI 2013

The above representation is a state wise distribution of the mobile phone market in India. It is evident that Uttar Pradesh constitutes the biggest market for mobile phones in the country, which can partly be attributed to it being the largest Indian state. Interestingly West Bengal also appears as a lucrative market for mobile handsets constituting nearly 8% of the total national market (Paul and Murti, 2016). As such it is just behind Maharashtra which commands 10% of the total mobile market and is at the same level as Tamil Nadu which too constitutes 8% of the total mobile demand. This indicates that mobile penetration is still mid-way in West Bengal and hence there exists potential to drive up mobile usage in the state.

With specific reference to distribution of mobile phone usage among rural and urban centers, the following data sets present a holistic picture.

State	Rural	Urban	State	Rural	Urban
Jammu & Kashmir	74.6%	83.3%	West Bengal	40.4%	76.3%
Himachal Pradesh	78.2%	88.0%	Jharkhand	34.9%	73.7%
Punjab	75.8%	80.8%	Orissa	33.9%	71.9%
Chandigarh	91.5%	93.1%	Chhattisgarh	25.8%	72.9%
Uttaranchal	75.0%	87.2%	Madhya Pradesh	44.2%	79.6%
Haryana	76.2%	85.1%	Gujarat	64.4%	85.1%
Delhi	78.4%	88.5%	Daman and Diu	76.9%	95.0%
Rajasthan	71.5%	85.3%	Dadra & Nagar Haveli	60.4%	97.2%
Uttar Pradesh	55.4%	78.4%	Maharashtra	52.6%	83.6%
Bihar	47.7%	75.6%	Andhra Pradesh	55.1%	80.2%
Sikkim	66.7%	94.6%	Karnataka	58.4%	84.1%
Arunachal Pradesh	38.6%	74.5%	Goa	68.0%	86.6%
Nagaland	68.4%	90.0%	Lakshadweep	79.4%	88.9%
Manipur	54.9%	74.8%	Kerala	78.5%	85.2%
Mizoram	58.7%	90.7%	Tamil Nadu	64.7%	79.4%
Tripura	55.0%	85.4%	Pondicherry	70.5%	84.6%
Meghalaya	48.6%	82.3%	Andaman & Nicobar	78.0%	94.0%
Assam	49.9%	85.0%	India	54.8%	81.4%

Figure 2: Household wise ownership of mobile phones
Source: Paul and Murti, 2016

The above distribution brings forth a disparity between urban and rural areas of West Bengal in the context of penetration of mobile telephony. While in urban areas mobile usage has been recorded at over 76%, in rural areas it is just over 40%. In fact mobile usage in rural areas of West Bengal is one of the lowest in the country (Paul and Murti, 2016). This partly explains why the state constitutes 8% of the total national mobile market. Hence there remains sufficient scope for encouraging the rural population to start using mobile phones in the state. Given the socio-economic benefits that mobile telephony offers, its increasing

use can be expected to be beneficial for West Bengal's rural population (Paul and Murti, 2016).

Probably this is what has prompted leading technology based corporate houses to come forward and launch specific programs to train communities and women on how to use the internet and the advantages they can derive from such practice. An example is the Internet Saathi initiative, which has been jointly launched by Tata Trust and Google to explain to community members about how they can use the internet to enhance their learning and leverage it for various benefits (Parbat 2016). In the initial phase the program has launched across 400 villages of Purulia district. Jointly the companies have set a target of training 1 lakh individuals about internet usage. Plan is to identify master trainers from the various women self help groups in the district and train them about internet operations, so that they can train other members about the modalities (Parbat 2016). While this selection and subsequent training will be coordinated and overseen by Tata Trust, Google will extend support by educating the master trainers and providing them mobile phones and tablets which can be used by the women for accessing the internet (Parbat 2016). This move is expected to build awareness among rural people about mobile internet use, which in turn can further push up mobile penetration and sales in West Bengal.

So, it can be opined that though mobile penetration in contemporary rural Bengal is lagging behind, in comparison to other states, there remains scope for its escalation in the near future. More people realize the benefits that mobile use and internet access can provide more attractive will be the proposition of adapting mobile phones to them. And for this to happen, health and economic benefits accruing from mobile usage will have to be showcased and propagated.

Economic benefits of mobile telephony in rural Bengal

Loyola (2005) had noted that mobile phones are presenting a new and cost-effective communication channel for small scale traders and entrepreneurs. Using mobile such individuals are able to gather critical business relevant information like current prices of raw materials, demand and supply situation, prevailing market prices and also trending consumer preferences. Mobiles were found to be effectively used by traders and entrepreneurs to expand their customer base by reaching out to new clients and territories (Coyle 2005). Similar results were reported from the study which was conducted in Janta village of Bankura district. Of the different types of calls made using mobile phones, business related calls were found to constitute a major proportion. Mobiles are being used by village level micro entrepreneurs to constantly communicate with their customers, suppliers and vendors even when they are not stationed at their place of business (Tenhunen 2008). So, when these individuals are travelling for business or personal reasons, mobile phones are keeping them connected to vital stakeholders thereby reducing any unfavourable impact of their physical absence on business. Given that the rural population of Janta is dependent on agriculture, the study brings out the positive impact of mobile phones on their economic progression also. Farmers and cultivators informed about using mobiles to gather information about existing market prices which helps them decide on the precise selling price of their produces. Some of the farmers also informed about selling their produce online saving them the hassle of having to transport their produce to the market

and look for prospective buyers. Online selling is proving to cost-effective and economically assuring for the growers (Tenhunen 2008). Process of online selling resumes much before the produce is actually cultivated and that allows farmers and cultivators to negotiate the best deal with prospective buyers. This thus enables cultivators to garner the best possible prices and also assured sales even before the crop is harvested (Tenhunen 2008). This also made middlemen redundant ensuring higher returns and profits for farmers. Thus, cultivators and farmer are now earning more profits, primarily due to mobile enabled online selling and transaction. Tenhunen (2008) also records the experience of a chicken farm owner, who was among the first individuals within his village to use mobile phones for business transaction. The respondent informed that conducting business over mobile helped him increase his monthly sales to 150 quintal from 30 quintal. The additional income generated was used to procure a refrigerator which was used for storing meat which was subsequently supplied according to demand (Tenhunen 2008). Within a short span of time, the chicken cultivator was able to buy a three-wheeler which was used to transport material to customers.
Another study conducted among agriculturalists in Purkuta village close to Rampurhat also returned similar results, as have been discussed above. Farmers of Purkuta village informed using their phones to learn about new and improved cultivation techniques which aided them in increasing the quantum and quality of their harvest. Mobiles aided farmers gather information about new fertilizers, better pesticides, updated irrigation techniques and machines that could be used for seamless harvesting (Mukherjee 2015). Mobile phones are frequently used by farmers to consult farming experts, who guide them on which crops to cultivate and which variety of seeds to use for best productive results. Additionally, they also receive guidance about expected weather conditions and all this information cumulatively helps them plan their farming approach (Mukherjee 2015). Like the cultivators of Janta, farmers of Purkuta also reported using their mobiles to negotiate the best prices for their harvest, prior to completion of harvesting. Thus, mobiles are assuring farmers best price of their produce which enhances economic returns and profitability. Moreover, it is helping farmers to plan storage of products, during times of low prices, so that they can transact when the market has corrected and prices have risen (Mukherjee 2015). Through mobile phones, farmers of the village are networking with farmers of other villages thereby enhancing their business circle, learning and awareness. This exchange of knowledge and learning is helping farmers to identify and rectify shortcomings which again leads to a better harvest and therefore increased earning (Mukherjee 2015).

Therefore, it transpires from the above that mobile penetration in the rural districts of West Bengal has immense positive implication for cultivators, poultry farmers and small business entrepreneurs. Mobiles are bringing markets closer to them, strengthening relation with customers and suppliers, helping in negotiation of better prices, enabling access to expert knowledge aiding in better crop and harvest planning and also in subsequent storage of products for future selling. The cumulative impact of these is enhanced earning and economic prosperity for farmers, cultivators and small enterprise owners of villages.

Mobile telephony and healthcare delivery in rural West Bengal

Healthcare delivery system in rural parts of India continues to lag behind the systems operational across urban centers. From their field study conducted across rural West Bengal, Chowdhury et al (2018) notes that healthcare facilities which can be accessed immediately

on requirement is majorly lacking in villages of Bengal. Villagers are often required to travel for more than ten to twelve kilometres to reach government health centers, a travel which can be agonizing and dangerous due to poor road and infrastructure conditions. Chowdhury et al (2018) points out that in cases of extreme urgency, the commuting time and experience can prove fatal for patients. Qualified medical practitioners or doctors can rarely be found in villages and hence help next-door is largely absent. Pharmacies or medical stores are also far-flung and there is no guarantee that medicine required will be found in stock (Chowdhury et al, 2018). Transportation is another issue which patient relatives have to struggle with as ambulance and other services are not handy and hence cannot be immediately accessed during times of medical emergencies. It has also been found that most rural healthcare workers or provider are not adequately trained in emergency handling or in medicine and hence their contribution during crisis also remains rather limited (Chowdhury et al, 2018). Penetration of mobile technology and evolution of support applications like mobile health is therefore perceived as a potent medium through which these issues can be satisfactorily addressed and adequately healthcare service delivery and support can be extended to rural population in West Bengal and also in other states. Chowdhury et al (2018) opines that by properly harnessing the potential of mobile telephony, specific interventions of national and state governments can go a long way in correcting the loopholes that currently exists in the healthcare delivery system. As an example it has been pointed that healthcare providers can be trained and subsequently encouraged to use their mobiles to consult trained doctors and other medical specialists about how to provide the first line of treatment to a serious patient. Such timely assistance can provide patients with critical initial support, which can keep them steady and stable while they are transported to the nearest medical facility. Healthcare providers can also use their mobiles to call for ambulance services or seek medicines from nearby pharmacies (Chowdhury et al, 2018). Such actions, made possible by mobile telephony, can prove to be immensely beneficial for patients and also ensure their safe passage to hospitals for further treatment. Mavalankar (2016) in his study focuses on the medical challenges faced by tribal population of rural areas and identifies lack of nutrition, gastrointestinal problems and malaria as widely prevalent diseases. Among the main deficiencies those of protein and iodine were highlighted in the study. To make things worse, excessive addiction to tobacco and alcohol also adversely impacts health of tribal of rural districts (Mavalankar 2016). To address these issues, the researcher suggests harnessing the power of mobile telephony. Mavalankar (2016) recommends conducting of specific training programs for village healthcare workers, auxiliary nurse midwives, village pharmacists and other workers on how they can access vital first care information using the mobiles till patients are moved to the primary health centers for further diagnosis and treatment. Mavalanakar (2016) suggests that health workers should use their phones to contact qualified doctors of district hospitals to learn about the initial treatment that can be provided and coordinate with thereafter coordinate with village medicine outlets to get the necessary medicines for support. Mobile phones can also be used to create awareness among tribal population about the ill effects of alcohol and tobacco addiction and try to dissuade them for these through constant communication through mobile telephony. Even telemedicine assistance can be extended to these villages through mobile technology. People can access telemedicine terminals using their mobile phones and talk to trained staff about the problem faced and curative steps to be taken. Such programs have produced encouraging results in villages of Punjab and Bihar. In the former the E-Health Point model and in the latter the Sky Clinics have been developed

as social enterprises and are providing medical assistance to villagers of far flung rural areas (Mavalankar 2016). The same can be replicated in villages of West Bengal also and it can be expected to produce positive results as has been reported elsewhere. Wagner et al (2018) conducted a longitudinal study in rural areas of West Bengal to find out the impact of involvement of community health workers on the health behaviour of families. Pregnant women and mothers of children aged between 12 and 24 months were included in the study. Findings indicate that involvement of community health workers did elevate the level and standard of family healthcare significantly (Wagner et al, 2018). Since intervention and feedback received from community health workers were found to influence people towards a healthy lifestyle, it underlines the benefits that can accrue if these workers are trained in mobile communication so that they can reach out to wider section which would not be possible through physical travel. Families can get in touch with community health workers via mobile as and when required and receive their feedback and guidance on different issues ranging from disease control and prevention to adapting a healthy way of living (Wagner et al, 2018). Thus promotion of positive health can be achieved if community health workers are encouraged to increasingly use mobile technology in discharging their responsibilities effectively.

Conclusion

Mobile penetration among rural areas of West Bengal continues to lag behind in comparison to penetration rate across urban centers and also in comparison to proliferation of mobile telephony across rural areas of other states. This presents a lucrative opportunity to the state to drive increased use of mobile telephones among the rural populace of the state. With reducing cost of hardware and tariff rates, the time is opportune for rural population to adapt mobile technology which can benefit them in myriad ways. As outlined, specific advantages can be noted in the domain of economic earning and assessing of healthcare delivery system. Small business owners can serve their customers better and also expand the periphery of their markets through use of mobiles. They can access vital information about prevailing prices of their produce and of raw materials, basis which they can strategically plan their approach. Agriculturalists and cultivators can negotiate better prices for their produce using mobiles and that to even before crop is finally harvested. In absence of fair prices, mobile based information allows them to decide storing of crops till a better price can be fetched from the market. Also knowledge about new technologies, weather conditions and fertilizers to increase crop yield becomes easily available through mobile telephony.

In terms of healthcare facilities, providing training to community health workers, auxiliary nurse midwives, pharmacists and field workers on how to access information through mobiles can help them provide vital initial care and treatment to patients before they are moved to district level hospitals or primary healthcare centers. It also allows them to get medicine supply on urgent basis from pharmacies and arrange for transportation like ambulance to move the patient to medical institutions. Even awareness creation becomes easier through mobiles, which can be used by health workers to share messages and information among the populace. Interventions like mobile communication training and getting villagers to increasingly use mobiles can therefore go a long way in addressing basic health issues that continues to plague rural areas of the state. It can be expected that as more and more people from rural areas adapt mobile technology there will be holistic

improvement in the economic and healthcare scenario across villages of West Bengal.

References

Census 2011. (2011). *Rural Urban Distribution of Population.* Available: http://censusindia.gov.in/2011-prov-results/paper2/data_files/india/Rural_Urban_2011.pdf. Last accessed 14th July 2019.

Chowdhury, A., Gautham, M., Kumar, A. (2018). *The role of informal rural healthcare providers in universal health coverage.* Available: https://www.ideasforindia.in/topics/governance/the-role-of-informal-rural-healthcare-providers-in-universal-health-coverage.html. Last accessed 14th July 2019.

Coyle, D. (2005). *Africa: the impact of mobile phones.* Available: http://www.vodafone.com/etc/medialib/attachments/cr_downloads.Par.78351.File.tmp/GPP_SIM_paper_3.pdf. Last accessed 14th July 2019.

Islam, M. S. (2011). *Creating Opportunity by Connecting the Unconnected: Mobile phone based agriculture market information service for farmers in Bangladesh*. Ineko: Orebro University. na.

Londhe, B. R., Radhakrishnan, S. and Divekar, R. (2014). Socio Economic Impact Of Mobile Phones On the Bottom Of Pyramid Population- A Pilot Study. *Economics and Finance*. 11 (na), 620-625.

Loyola, J. (2005). *Inter-city marketing network for women micro-entrepreneurs using mobile phone: social capital brings economic development.* Available: http://www.i4donline.net/feb05/intercity_full.asp. Last accessed 14th July 2019.

Mavalankar, D. (2016). Doctors for Tribal Areas: Issues and Solutions. *Indian Journal of Community Medicine*. 41 (3), 172-175.

Mehta, B. S. (2013). Capabilities, costs, networks and innovations: impact of mobile phones in rural India. *Working Paper 29*.

Mukherjee, K. (2015). Socio- Economic Impact of Mobile Phone on Agriculture at Purkuta Village, Rampurhat II. *International Journal of Innovative Research in Science, Engineering and Technology*. 4 (7), 5889.

Parbat, K. (2016). *Google, Tata Trusts launch 'Internet Saathi' in West Bengal to empower rural women.* Available: https://economictimes.indiatimes.com/tech/internet/google-tata-trusts-launch-internet-sathi-in-west-bengal-to-empower-rural-women/articleshow/52651338.cms?from=mdr. Last accessed 14th July 2019.

Paul, B. and Murti, A. B. (2016). Socio-economy of Mobile Phone Ownership in India. *Technology: Corporate and Social Dimensions*. na (na), 157-165.

Telecom Regulatory Authority of India. (2013). *Annual Report 2012-13.* Available: https://main.trai.gov.in/sites/default/files/TRAI-English-Annual-Report-10032014.pdf. Last accessed 14th July 2019.

Tenhunen, S. (2008). Mobile technology in the village: ICTs, culture, and social logistics in India. *Journal of the Royal Anthropological Institute.* 14 (na), 515-525.

Wagner, A. L., Xia, L., Ghosh, A., Datta, S., Pandey, P., Santra, S. et al. (2018). *Using community health workers to refer pregnant women and young children to health care facilities in rural West Bengal, India: A prospective cohort study.* Available: https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0199607. Last accessed 14th July 2019.