
CHAPTER -2

REVIEW OF LITERATURE

Literature pertaining to any field forms the foundation upon which all the future work is built. The research worker needs to acquire up to date information about what has been thought and done to the particular area from which the research worker intends to take up a problem of research.

The primary objective of review of literature is to imbibe the understanding of the past work that had been done on the subject and to check out a research endeavor with the focus on the unexplored aspect of the problem and incoherent. So the review of literature aids the researcher with methods, measures, subjects and approaches employed by other researchers. In the event of not taking stock of this knowledge provided by the review of literature, there are chances of duplicity and work is likely to become irrelevant and incoherent.

In order to gain a thorough insight that helped in shaping the theoretical proposition of the present research; studies, from two decades, on mobile phone in India and Abroad have been presented in the text follows -

Joshi et. al. (2001) examined the usages of mobile phone among collegian students of Palanpur. Data revealed that price, shape, color and features were most affecting factors that influence behavior of rural consumers specially students who generally come from rural areas or villages.

Salahuddin et.al. (2003) assessed the efficacy of the Village Phone (VP) scheme in ameliorating the 'information poverty' of the villages that have obtained

access to mobile phones in Bangladesh. The study found that at the individual level, the VP has indeed contributed significantly increased business transactions and income generation. Moreover, at the community level, it has narrowed gaps between cities and villages by enhancing more communication between family members and dissemination of information.

Stuckey (2004) identified five components; imagination, appropriation, objectification, incorporation and conversion as causes of addiction to cell phone. Cell phones have unprecedented ability to exert influence on social interactions and daily life and intrusive in our social space. This technology could bring people to be individualistic, alienating them from society or converging a single language or set of norms.

Sultan and Riyadh, (2005) examined the mobile phone related hazards among 873 (57.04% of males and 39.86% of females) subjects using mobile phones. Result showed association between the use of mobile phones and hearing and vision complaints. About 34.59% of problems were related with impaired hearing, ear ache and/or warmth on the ear, and 5.04% of complaints with the decreased and/or blurred vision.

Parikh et al. (2006) conducted usability evaluation of an application built using CAM for collecting data from microfinance groups in rural India. Results showed that user interface is efficient, accurate and can quickly be learned by rural users. Voice feedback and numeric data entry were particularly well-received by users.

Bali and Singh (2006) examined the feasibility of using mobile phones for providing health care in rural Haryana. During the study period 660 calls (414 from mobile phones) were received by the PI from different part of the country with mean call duration 2.7 minutes. Eighty percent calls were made by males and about half (48.3%) during office time (9 AM to 5 PM).. About 34% (224) calls were made for the advice on particular health problems or disease followed by 196 (27.3%) for treatment of a particular ailment. Most common morbidities for which they called were skin problems, respiratory problems, mental problems, sexual problems, gastro intestinal problems and loco motor problems.

Cilliers and Parker (2007) investigated the social implications of use of cell phone by teenagers. It was found that factors like sense of uniqueness, identity and independence were prominent in interpersonal relationships. Teenagers were at great risk of cyber bullying.

Kathleen et.al. (2008) studied technology spending patterns of mobile cell phone and poverty level change among households in Uganda. The results indicated gender inequality through exacerbated asset control and mobile phone inexperience further drive digital divide. However, proliferation of small businesses development encourages phone ownership for women.

Butt and Phillips (2008) studied the degree and types of mobile phone use as function of personality. Extrovert reported spending more time calling, changing ringtone and wallpaper, implying the use of the mobile phone as a means of stimulation, extroverts and disagreeable less valued incoming calls. The neurotic,

disagreeable, unconscientiously and extroverted spent more time messaging using SMS.

Kapdi et. al. (2008) conducted study on health hazards of mobile phones in Indian perspective. Usage behaviors, such as duration of usage and predominant one-sided use of mobile phones were some of the chief risks that increase likelihood of hazards.

Houghton (2009) examined the impact of mobile telephony on productivity in developing nations using micro-data from Swaziland, Cambodia, and Honduras. The results evidenced that mobile phone ownership does indeed improve productivity at the household level.

Short and Murray (2009) explored the link between the mobile phone use and harassment behaviors. Findings indicated that harassment by text is more prevalent than other forms of off-line stalking and despite recipients reporting being distressed, there was still a higher level of acceptance of this form of harassment than other forms.

Ravichandran (2009) stated that mobiles are safety devices at times of emergencies, but, teenagers are addicted and obsessed with texting and distracted from their academics. Bullying and abusive messages were another form of menace of cell phones.

Hashizume et. al. (2009) focused on the use of the cell phone by senior people living in the urban and rural area in Japan. The result of the questionnaire research showed differences in the use of the cell phone and other communication

media attributed to the difference in the life pattern and the environmental factors in both areas.

Kathuria et.al (2009) concluded that network coverage, price, value-for-money and billing integrity, recommendations from family and friends, customer service and company image were the major factors influencing the choice of service provider network problem was observed to be the most important reason for switching over to other mobile phone service provider.

Dayoung (2009) examined the impact of mobile phones on the status of women in India using nation-wide cross-sectional data at the individual level; build on Jensen and Ouster's model. Data revealed that mobile phones significantly decrease tolerance for domestic violence, increase women's autonomy in mobility and economic independence.

Liu et al. (2009) collected data on 28 factors in Chinese rural area to mobile entertainment. Seven factors extracted through explorative factor analysis were social influence, technology, service quality, entertainment utility, simpleness and certainty, self-efficacy, perceived novelty, and cost.

Valk et.al. (2010) examined the role of mobile phone in the developing countries of Asia in a learning pilot projects that took place in the Philippines, Mongolia, Thailand and India in two specific ways: 1) in improving access to education, and 2) in promoting new learning. Analysis of the projects indicated that while there is important evidence of mobile phones facilitating increased access, much less evidence exists as to how mobiles promote new learning.

Kumar et. al. (2010) explored possibility of unsupervised mobile learning in out-of-school settings in rural India assuming that cell phones are a perfect vehicle for making educational opportunities accessible to rural children in places and times that are more convenient than formal schooling carried out through participant observations in their everyday lives. The results indicated the reasonable level of academic learning and motivation.

Kaur and Joshi (2010) collected data to find out the opinion and preferences of farmers towards the use of mobile phones in agriculture. The results indicated that the farmers preferred information on marketing most, as it attained first rank. According to farmers, State Agriculture Universities are the most credible source of information while private agencies are least. Majority of farmers preferred 2-3 messages per day for fulfilling their information needs and finally, production is the most used area of Rural Social System among the farmers by mobile phones.

Balasubramaniana et.al. (2010) focused on possibility of using mobile phone as a tool to promote learning among rural woman in Southern India. The research demonstrated that transition from powerlessness to empowerment is possible in non-formal learning settings and low-cost technologies offer means to accelerate this process in the context of social capital.

Shet et al. (2010) surveyed clinic attendees in urban and rural south India to ascertain usage of mobile phones and perceptions of their use as an adherence aid. A high proportion (66%) reported using phones to call their healthcare provider. There

was interest in weekly telephonic automated voice reminders to facilitate adherence. Loss of privacy was not considered a deterrent.

Ngumbuke (2010) studied the reasons and effects of the disparity between men and women for mobile phone solution on rural Iringa in Tanzania. The findings showed that men culturally taken as main responsible persons in the family, had more authority and income over women, and more used mobile phones for business or work of any kind.

Matanhelia (2010) examined region and gender differences in the use of mobile phones to fulfill communication, media and age-related needs by young people in India. In the first phase, in-depth interviews were conducted with 30 college-going young adults (18 – 24 years) and in second phase, a survey was conducted with 400 college-going young adults (18 – 24 years) in Mumbai and Kanpur. The qualitative analysis of the data showed that young people in both the cities used cell phones for a variety of communication, news and entertainment needs. Additionally they used them to store private content, maintain privacy, to negotiate independence from parents and create and maintain friendships with members of opposite sex.

Singla (2010) investigated the behavior of mobile phones consumers in Ludhiana and Sangrur districts. The study indicated that while quality and features were the most influential factors affecting the purchase of a new mobile phone, its price, audibility, network accessibility, were also regarded as the most important in the choice of the mobile phones. The study concluded 57% of male has given importance.

Masuki et al. (2010) explored the role of mobile phones in improving communication and information delivery for agricultural development in South Western Uganda. Findings showed that use of phone was appreciated by rural communities as easy, fast and convenient way to communicate and get prompt answers of respective problems. Use of mobile phones to access information differed from one parish to another. Information on marketing was on higher demand (100%), yet more female farmers requested information on NRM and agriculture as compared to male farmers.

Sife et al. (2010) conducted study on sample comprised of 310 households, (74 focus group participants and 22 key informants) in Morogoro region, Tanzania. The findings indicated that mobile phones contributed to reduce poverty and improve rural livelihoods by expanding and strengthening social networks; increase people's ability to deal with emergencies; cut down travel costs; maximize the outcomes of necessary journeys; increase temporal accessibility and also reduces costs of doing business and increases productivity by helping rural traders and farmers to secure better markets and prices; and promptly communicate business-related information.

Dass and Pal (2011) indicated that the demand for banking and financial services and the amount of hardships faced in availing these services through the existing channels of delivery could act as strong drivers for mobile finance services adoption among the rural under-banked population whereas factors like lack of trust on technology and lack of technology readiness were found to act as barriers to the adoption of MFS.

Patel and Rathod, (2011) in a study on mobile phone usage habits of students commuting from rural areas. indicated strong brand preference. The most used feature of the mobile phone was SMS because of economy. Findings also showed that male students send more text messages than the female students.

Mehta (2011) conducted study on the impact of mobile phones in rural areas of Punjab. The end-users of mobile phones in rural areas were mainly farming community, traders, casual laborers, women and other stakeholders. Perception among mobile phone end-users in rural areas showed a positive impact of this technology on their livelihood.

Onwuemele (2011) conducted survey to examine the impact of mobile phones on rural livelihood assets of Ovia, north east local government area, in rural Nigeria through a questionnaire. Results indicated that mobile usages have significant impact on social and human capital livelihood assets of rural households.

Ferras et.al. (2011) analyzed how rural youth communicate via mobile telephone and if gender accounts for any significant differences. The results indicated that rural youth were indeed avid users of mobile telephones and suggested that they are getting around the physical and technological inaccessibility and isolation inherent in rural areas.

Furuholt and Matotay (2011) investigated the use of mobile phones among farmers in rural Tanzania in order to supply empirical data on the developmental role of this technology. The results showed the improved access to communication and information through mobile phones affects the entire cyclic farming life during

and resulted in considerable changes in the entire livelihood constructs, increased opportunities and reduced risks.

Martin and Abbott (2011) examined diffusion, uses, and perceived impacts of mobile phones among 90 (50 women and 40 men) farmers in Kamuli District Uganda of owning small to medium-sized farms. The result indicated a number of unique uses, including storing local market trends in the calendar, using the speakerphone function for group consultation with agricultural experts, and taking photos of agricultural demonstrations.

Mitchell et al. (2011) in survey on acceptability of cell phone usage for relaying health information among 1503 secondary school students in Mbarara, Uganda (collected in 2008–2009) suggested that they would access a text messaging-based HIV prevention program if it were available. Other forms of program delivery modality (e.g. Internet, religious organizations, schools) were preferred to text messaging however.

Katengeza (2011) in a Malawi based study on use of Mobile phone technology in agricultural marketing reported that use was positively affected by literacy, distance to local market, land size, current value of assets, crop income, and region variations but negatively influenced by access to electricity. Intensity of use was conditioned by gender, participation in agricultural projects, ownership of a mobile phone, current asset value, distance to nearest public phone services, and region variations.

Rabayah and Qalalwi (2011) found in Palestine that, 84% of all enterprises used mobiles for information related issues valuable for their businesses; 38% of respondents used their mobiles to administrate their internal operations and another 84.4% feel enhancement in their response to customers.

Oluwatayo (2012) examined the experience of 360 farming Households in Rural Ekiti and Osun States in Southwest Nigeria for using mobile phones as mobile banks and credit outlets. Credit acquisition in the form of transfer of recharge cards (which are later converted into money) as the most prioritized followed by getting information about personal account information (debiting and crediting) while making business transaction through mobile phones was the least patronized of all the services provided.

Nyamba and Mlozi (2012) conducted study on factors influencing the use of mobile phones in communicating agricultural information in Rural Tanzania. 384 respondents and 16 key informants were contacted for interview and Focus Group Discussion, respectively. Most of respondents valued mobile phones as easy, fast and convenient way of communicating agricultural information. Factors that influenced mobile phone use included mobile phone ownership, type of agricultural information to be communicated, farming system practiced, network coverage and socio-economic characteristics.

Fortunati and Taipale (2012) based on the female sub-sample of nationally representative survey data collected from Italy, France, the UK, Germany and Spain (N = 7,255) in 2009 concluded that women living in blended families seem to

associate more distress and less feelings of contentment with the mobile phone than women living in other types of family.

Thomas (2012) study on the affordable mobile technology towards Preventive Health care in rural India suggested implications of mobile phone messaging to improve the process of health care delivery and health services to become healthy and productive citizens.

Kuldeep and Meenakshi (2012) conducted interviews to examine the users and use-pattern of mobile phone in a village of Haryana. More than 70% mobile phones users are in active-age (15-45), 97% were literate 79% having school level (primary to twelfth) education. Mobile phones users were village elites with 42%, middle class with 26% and lower with 22%. More than 80% users purchased mobile phones to get connected with family and relatives. Purchase decisions (more than 75%) regarding mobile phone were taken by the head of the family, mainly by fathers or grandfathers, only 16% users used customer care services.

Chib et.al (2012) revealed four main benefits of using mobile phones; opportunity production, capabilities enhancement, social enabling and knowledge generation in the Indian rural healthcare context. Obstacles to usage included economic, technological, socio-cultural and infrastructural barriers.

Medhi et.al (2012) conducted research on combating rural child malnutrition through inexpensive mobile phones, through a three-month unsupervised field trial with ten rural health workers and reported data management gains in terms of data

quality, completeness and timeliness for 836 recorded patient cases, and demonstrated strong preference of the system by health workers.

Megumi (2012) indicated that possession of mobile phone increases an individual's chance of leaving rural village to find a job, and second, that mobile phone use increases the chance that an individual will choose migration to a greater degree for individuals who belong to a smaller ethnic group than to a larger group in the capital city, Kampala.

Hamilton (2012) examined the role of mobile phones in health interventions designed for a rural community in Kenya. Text messages, in particular, were a feasible and culturally appropriate medium to target at-risk groups to receive health information, medication adherence reminders, and referrals.

Kwakwa (2012) conducted study on mobile phone usage by micro and Small Scale enterprises in semi-rural Ghana and found that entrepreneurs/business managers would use more than one mobile phone and/or subscribed to more than one network in order to make affordable calls, to enjoy excellent service for business purposes, security reasons and place for many personal contact numbers. Apart from marketing/sales purposes, the managers/entrepreneurs used phone for the gathering of information, for product delivery/procurement and managing internal affairs among others.

Baumüller (2012) stated that m-services could help to overcome some of the obstacles to technology adoption by facilitating access to information and learning,

financial services, and input and output markets. The result showed that there was a risk that the poorest and marginalized may fall behind.

Yu (2012) empirically based on 441 respondents concluded that individual intention to adopt mobile banking was significantly influenced by social influence, perceived financial cost, performance expectancy, perceived credibility, individual intention and facilitating conditions. Gender significantly moderated the effects of performance expectancy and perceived financial cost on behavioral intention.

Kirui et.al. (2012) found a very high awareness of mobile phone based money transfer services among the smallholder farmers in Kenya and found predominant use of remitted funds for agricultural related purposes (purchase of seed, fertilizer for planting and topdressing, farm equipment/ implements, leasing of land for farming, wages for labour).

Das et. al. (2012) explored the potential of mobile- based voice messaging services provided by IKSL through sixty randomly selected farmers from two blocks of Paschim Medinipur district, West Bengal. The result revealed considerable contact of farmers with the progressive farmers (43.3%) followed by IKSL (40.0 %) and input retailers (28.3%). In respect of frequency, quality and timeliness of the information provided by IKSL, farmers ranked fertilizer, pesticide and seed in descending order.

Beuermann et al. (2012) conducted a study on the effects of mobile phone infrastructure in rural Peru. Estimate suggested an increase of 7 percentage points in the likelihood of self-reported cell phone ownership after coverage, an increase of

7.5 percent in yearly household expenditures, and a 13.5 percent increase in the value of assets.

Kokate and Singh (2013) conducted a pilot study on value and impact of use of mobile technologies for empowering, providing information and advice on agriculture to small holder farmers in India. Study indicated flow of variety of messages reducing the cost and availability of information at right time.

Krithika and Vasantha (2013) in a study on 201 higher secondary college students concluded that phone use was so strongly integrated into behavior that despite of the positive benefits like using cell phone to connect/call family, friend etc. they have symptoms of behavioral addiction, such as cell phone usage interrupting their day to day activities.

Prue et al. (2013) in a project on role of mobile phones in case detection and management of malaria in rural Bangladesh, (an area with hypo endemic malaria) recorded 986 mobile phone calls from families because of illness suspected to be malaria between June 2010 and June 2012. The result showed that based on phone calls, field workers visited the homes with ill persons, and collected blood samples for malaria on 1,046 people. 265 (25%) of the patients tested were positive for malaria.

Jain and Kakkar (2013) in a study on mobile phone addiction among youngsters reported that many mobile phone addicts are people with low self-esteem and have difficulty in their social relationships and feel that they need to constantly

contact with others. Turning off mobile phone precipitated in anxiety, sensitiveness, sleep disorders, insomnia, shivering and even digestive problems.

Sata (2013) in a study on factors affecting decision to buy a mobile phone device found positive and significant correlation between six factors i.e. price, social influence, durability, brand, product features and after sales service with the decision to buy a mobile phone device.

Jha (2013) in Bihar based study found that the urban consumers gave first preference to the brand name, then features of mobile like dual SIM followed by user friendly in contrast to rural consumers who gave first preference to the feature like dual SIM, Hindi settings when purchasing a mobile phone. The price of mobile phone stands as second factor influencing purchase decision. The advertisement of the mobile phone was ranked at third place.

Elangovan and Arulchelvan (2013) explored the role of mobile phone usage and its effectiveness in tuberculosis DOTS treatment. A cross-sectional survey with 150 TB patients was followed by a focus group discussion with treatment supervisors, DOTS providers, and health workers. The Results showed that Majority of patients use mobile phones to make calls to health workers, to clarify their doubts on side effects, food, and symptoms of the disease. TB treatment supervisors effectively use mobile phones to counsel patients to adhere to the treatment regimen.

Tetty (2013) examined the usage of the mobile phone in the business of farmers (N=100) within Akuapem, north district in the Eastern region, of Ghana. It was found that the use of the mobile phone improved customer relation, enhanced

communication with suppliers, extension officers and customers, and it had also increased farmers profit. Inability to have access to calling cards regularly, fluctuation in network receptions and constant energy to charge their mobile phone for rural agriculturalists were some of the challenges.

Ganesan et al. (2013) conducted a study on use of Mobile Multimedia Agricultural Advisory Systems (MASS) by Indian farmers. The results had shown that a majority of the farmers perceived information on pest and disease control as most important and they also felt that accessing information through mobile phone was easy and convenient. The quality of information, timeliness of information and reliability of information were the three important aspects that have to be considered seriously to meet their requirements and prospects in the coming years.

Acharya et.al. (2013) explored some of the common health effects of increased cell-phones on the well-being of college going students in the age group 17-23 years from urban and rural backgrounds using the device for a greater part of the day. Headache was found to be the commonest symptom (51.47%) followed by irritability/anger (50.79%) and other common mental symptoms included lack of concentration and poor academic performance, insomnia, anxiety etc. Among physical symptoms body aches (32.19%), eye strain (36.51%), digital thumb (13.8%) were found to be frequent.

Siddique et. al. (2013) collected data from randomly selected 80 students from the Comilla University, Bangladesh. to find out the effect of specific features and explore its relationship with purchase decision Results suggested that internet facility, multimedia, long lasting battery, camera, brand recognition, performance

and color of mobile handset mostly persuade purchasing decision and external memory capacities, warranty period, price, customer-care service, phone memory capacities, country of origin have some influence over purchase decision.

Kanakaiah and Raghupataiah (2014) found significant difference of quality, functions and brand consciousness for purchase of mobile phone between rural and urban consumers. Rural consumers are less quality, functions and brand conscious compared to urban consumers. Rural consumers mostly use friends, T.V. and mobile phone retailers as the source of information.

Bansal and pundir (2014) in review study dealing with extent and pattern of mobile phone use in rural areas and how it might affect lives of rural folks indicated that entrepreneurs/business managers used more than one mobile phone and/or subscribed to more than one network in order to make affordable calls, to enjoy excellent service for business purposes, security reasons and place for many personal contact numbers and getting around the physical and technological inaccessibility and isolation inherent in rural areas.

Singh and Singh (2014) reported that rural consumers consider eight factors like price, quality, warranty, advertisement, brand, friends family members' recommendation and packaging while making purchase decisions. The effect of price and quality on buying behavior of rural consumer increases significantly with increased in age and income.

Sethi and Chawla (2014) in a study on influence of cultural, social and marketing factors on the buying behavior of rural, semi-urban and urban telecom

users in and around Chandigarh, reported that majority of respondents were in strong agreement that they will choose the service provider which leads them for maximum interaction. Addition to that the prestige, social class, brand image, word of mouth, advertisement campaign and innovation in services were also considered by respondents.

Roy (2014) indicated that adoption behavior of rural people did not exhibit a correlation with the ease of use of the application. Social influence and perceived usefulness had a strong influence on adoption behavior.

Petr et. al. (2014) donated phones to 234 farmers selected by stratified random sampling in an agrarian region of Ethiopia and tracked their main communication partners for six months. Data indicated that the phones were typically used to call contacts that had been known personally living beyond comfortable walking distances. Physically proximate community members who tend to be met frequently were preferred for sentiment-sharing calls.

Osadebamwen and Ideba (2015) based on responses of 328 smallholder farmers from Sub-Sahara Africa indicated that more young and educated farmers use mobile phones. The farmers spent more bill for seeking market information than any other agricultural activities. Obtaining weather information was the least benefited area.

Jacobson et. al. (2015) conducted semi- structured interviews (n=20) (9 health workers and 11 policymakers) in two rural districts of Southwest Uganda to find flow of health in informatics and role of mobile phones. Results showed that

health information moved primarily in one direction: from health workers to policymakers. While both groups had a positive perception of mobile phone utility in the health system, noted concerns included scalability and sustainability, in particular with respect to cost and maintenance.

Parmar et. al. (2015) based on survey of 65 rural consumers found that need, social status, perceived usefulness, social influence, perceived risk control (fitness to use) and product attributes were the factors affecting on mobile usage . Charging, hanging of mobile battery life of phone, language of phone, networks issue, slow internet, high cell rates, call drop, complex technology, improper support from call centre were some of the problems faced by rural mobile users.

Diwan et. al. (2015) explored mobile-based syndromic surveillance system implementation and feasibility including three formal and six informal health care providers from two districts of Madhya Pradesh, India and concluded that mobile-based surveillance system can be used to collect information on patients.

Behl and Pal (2016) in exploratory study on barriers towards sustainable financial inclusion using mobile banking in rural India indicated that usage of the mobile banking technology and longevity is largely driven by the perception; whether it is towards usefulness, ease of use or risk aversion and influence of peer pressure plays important role towards degree of diffusion of mobile banking in rural setup.

Selvabaskar et. al. (2016) investigated the usage and preferences for mobile and mobile services among 340 respondents (140 rural and 200 urban) in delta

districts of Tamil Nadu and found digital divide gap between two groups. The people in both urban and rural areas were not familiar with the use of various online services of the government and other voluntary organizations. The online activities of the rural population were limited to messaging and few mobile applications.

Mutunga and Waema (2016) in a Kenya based study concluded that mobile phone positively affect rural livelihood outcomes when used in the context of market oriented farming with supportive ICT regulations and policies and adequate infrastructure and use mobile phones at higher levels.

Amidtaher et. al. (2016) investigated the relationship between mobile cellphone dependency, mental health and academic achievement in 340 students (182 females and 158 males) Kermanshah in 2014-2015 school years. Multiple regression analysis showed that the components of the life dysfunction, compulsion-persistence, and deprivation tolerance predicted 23.9% of changes in academic achievement and 20.1% of mental health changes.

Bansal and pundir (2016) in a study on mobile phone addiction among adolescents and young adults (N=200) found no significant difference in mobile phone addiction among adolescents and young adults group but significant gender differences; higher among boys as compared to girls with much variability.