Does Demographics Influence Adoption of Information Technology Devices? –an understanding of Rural Consumer Behaviour

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Abstract

The Information Technology sector has immensely contributed to India's growth story. It has put India's name on the global map and has been a major contributor towards the growth of Indian economy. This study assesses the ownership of information technology devices among rural consumers, their preferences towards these devices and whether the demographic characteristics have an impact on ownership and preferences of these devices. Data collection from rural consumers was through a structured questionnaire with questions related to the demographic profile of the respondents, currently available information technology devices and factors responsible for not having them and also related to preferred information technology device. Through the study new information has been generated which is useful in assessing the adoption of information technology devices like laptops, computers, smart-phones, tablets, notebook/netbook etc. by rural consumers. It has been observed that, although the penetration of mobile phones has reached a remarkable number, there is a lot more to be done in order to popularise and increase the demand for other technological devices in rural areas.

Keywords: Rural India, Information Technology, Information Technology devices, Ownership.

Introduction

With more than 1210 million population, India is the second most populous country in the world. Of this population, almost 833 million people are living in rural areas and 377 million people are living in urban areas. From the above figures, it is right to say that India lives in its villages as almost 69 per cent of the total population is living in rural areas. A major chunk of India's economy depends on the rural

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areas, which is clear from the fact that 69 per cent of the population, 56 per cent of income, 64 per cent of expenditure and 33 per cent of India's savings are coming from rural India (Kashyap 2012). Further, since timely adoption and proper use of information technology can have socio-economic impact on a country and its people, therefore, studying the adoption, acceptance and problems associated with it is of immense importance to further streamline the pace of development in rural areas.

Rural development has remained a persistent challenge in both developed as well as developing countries. The basic reason for this is low population density and hence low density of markets leading to distant markets and information resources (Malecki, 2003). As far as developments of Information & Communication Technology (ICT) services are concerned, rural areas are far behind the urban areas. Although the pace of developmental schemes have considerably increased income of rural people, still majority of the population is not having even a computer at their disposal. A recent study conducted by KPMG-MAIT has revealed that the Personal Computer (PC) penetration in India is just 10 per cent which is way below the major emerging economies of the world. There is systematic lack of ICT enabled services in rural India. Government of India has not been able to put much effort to popularise the use of computer technology in rural areas. Amongst 168 million rural households only 9 million households currently have PCs. However the Government is spending millions of rupees in order to popularise and promote information technology among the masses through various kiosk schemes. But in bringing technology to the masses majority of the efforts end up in providing solutions to the problems of accessibility, awareness, experience, illiteracy, economical solution *etc.* instead of delivering the real benefits of technology to the masses (Mistry *et. al*).

Background

The development of Information and Communication Technology (ICT) services in rural areas in developing countries like India has always been questionable. It is a common question whether the money be utilized for computer and communication devices or on providing food, shelter, health and education to the rural people (Arunachalam 2002). Therefore, it is really important that the technology suffices the genuine advantage of its existence in such places. It is necessary to understand the need of the villages before the introduction of any kind of new technology in these areas (Gopinath 2007). Gilbert *et al.* (2010) has informed that there are

unique technological needs of the rural communities but how they use the modern technology is very less known which results in collective lack of knowledge about how to design for the rural life. Narula *et al.* (2010) considers ICT as a crucial requirement for sustainable agriculture development in developing economies. Opportunities for the poor people can be enhanced by improving access to markets, health and education and by expanding the governance services for them (Malhotra *et al.* 2008).

Kendall *et al.* (2012) believes that development of ICTs can have a positive effect on productivity & growth and can improve market access for rural people thus reducing price dispersion and transaction cost and hence promoting market integration. Schwittay (2008) believes that ICTs are a great tool in developing projects creating new sources of income, making Government schemes more transparent and accessible, improving healthcare and overcoming social exclusion and discrimination.

The development of ICT services in rural India mainly started from the year 2000 onwards. The major ICT projects are (Lather *et al.* 2009): Drishtee (2000), ITC e-choupal (2000), n-Logue communications (2002), Azim Premji Foundation (2001), Hole-in-the Wall Education Limited (2000), i-Shakti by HUL(2001), ARTI (Appropriate Rural Technology Institute) (1996), Computers on Wheels (2003), Village Knowledge Centre (1998), Saksham by Microsoft (2006), e-Seva center by Tata Consultancy Services (2001) *etc.* Most of these ICT initiatives provide agriculture related information, education, healthcare, training, entrepreneurship development *etc.* Government of India launched 'Digital India' campaign in July 2015 to ensure that Government services are delivered to citizens electronically by making the country empowered in digital technology. Digital India aims to connect rural India with high speed internet connection and bring universal digital literacy.

Although a number of ICT services are existent in rural areas but as far as adoption of information technology at household level is concerned the situation is worrying and a major bottleneck. It is clear from the recent study conducted by KPMG MAIT research agency, that only 10 per cent households in India have computers installed at their homes. The situation is further grim in rural areas where out of 168 million households only 9 million have computers installed at their homes. Further adding to the concern is the report published by CII & IMRB International (2013), which states that India has less than 1 broadband connection

per 100 inhabitants with only 6.8 million connections in the year 2009 which is much lower than Brazil and China.

A number of studies have been conducted on ICT development services and various ICT projects, but there is insignificant research on rural consumer's ownership and his/her preferences in adoption of Information Technology devices among rural households. Prado *et al.,* (2011) while evaluating ICT adoption in rural Brazil stated that ICTs in rural communities are mainly being used for entertainment, engaging in civic participation and for practicing professional skills and this digital inclusion among the communities creates opportunities for them thus leading to human development. Internet can further help rural consumers to overcome time and distance constraints through online shopping (McHugh 2014). However, almost 68 per cent of the rural Indian population has much to experience as far as online shopping is concerned (Mir 2014). It is significantly known that information technology devices like smart-phones, laptops, computers, tablets, notebooks/netbooks *etc.* are becoming popular with each passing day. Therefore, it is necessary to find out the ownership and preferences of these devices by rural consumers and how significant is the role of demographics while adopting them.

Objectives

The following objectives have been established to find out the ownership and preferences of information technology devices of the rural consumers:

1. To determine the ownership of Information Technology devices among rural consumers.
2. To identify factors affecting ownership of information technology devices amongst rural consumers.
3. To determine the preferences of information technology devices amongst rural consumers.
4. To study internet usage behavior of rural consumers.

Methodology

The study was conducted in four villages of Kurukshetra district in the state of Haryana, India. Primary data collection was carried out with the help of a structured questionnaire which was distributed amongst randomly selected households in each of the four villages of the district.

The research paper aims to find out the ownership and preferences of Information Technology devices by the rural consumers and assess influence of demographics on the adoption of these devices amongst them. The primary survey was conducted in four villages of Kurukshetra district thereby covering randomly 50 households from each village and the total sample size of 200 from four villages in the district. The data was collected from Dhyangla, Bakali, Sultapur and Gudha village of Thanesar tehsil in Kurukshetra district.

The questionnaire sought information relating to the general demographic profile of the rural respondents, educational qualification, family income, available information technology devices, easy to use devices, preferred information technology tool with respect to ease of using them and information related to influence of the social group in making a purchase decision.

Demographic Profile of the Respondents

Of the total sample of 200 respondents, 91 per cent were male and 9 per cent were female. This indicates that ICT owners and users in rural areas are predominantly males. Gender disparity has been observed in the usage of ICT devices.

Majority of the respondents were between 31-40 years (41.5%) of age, followed by those between 19-30 years (38%) and 41-50 years (18.5%) (Table 1). There were only two per cent respondents between 51-60 years of age. It is, therefore, obvious that the ICT owners are relatively young adults and middle aged. This trend may have significant implication for ICT usage as elderly people in rural areas might be least interested in owning and using ICT services and prefer oral and written information channels or personal sources as more reliable sources for seeking information.

Majority (67.5%) of the respondents were found to be married, with only 32.5 per cent being single. This indicates that majority of the respondents in rural area of Kurukshetra were married with family responsibilities.

Regarding education levels, it was found that most of the respondents were graduate (43.5%), or completed high school (32.5%). Very less number of respondents were post graduates (16.5%) or had completed secondary school (7%) (Table 1). This indicates that respondents were not illiterate and had at least one or the other educational qualification which could enable them in utilizing ICT devices and services for work efficiency and better rural livelihood.

Table 1. Demographic Profile of the Respondents

	Variables	Frequency	Per cent
Age in years	19 to 30	76	38
	31 to 40	83	41.5
	41 to 50	37	18.5
	51 to 60	4	2.0
	Total	**200**	**100.0**
Highest Educational Qualification	Primary	1	.5
	Secondary School	14	7.0
	High School	65	32.5
	Graduate	87	43.5
	Post Graduate	33	16.5
	Total	**200**	**100.0**
Occupational Status			
Student		25	12.5
Private job		22	11.0
Government job		6	3.0
Own Business		42	21.0
Laborer		30	15.0
Farmer		71	35.5
Other		4	2.0
	Total	**200**	**100.0**
Monthly income (income of all family members)			
Below Rs. 5000/-		1	.5
Rs. 5001 to 10000		61	30.5
Rs. 10001- 15000		68	34.0
15001-20000		43	21.5
20001 or above		27	13.5
	Total	**200**	**100.0**
Languages Known			
Hindi		200	100.0
English		115	57.5
Punjabi		66	33.0
	Total	**200**	**100.0**

Regarding occupational activities it was reported that 35.5 per cent of the respondents were farmers, 21 per cent were businessman, 15 per cent were laborers, 12 per cent were students, 11 per cent were in private jobs while only 3 per cent were in Govt. jobs. Out of 42 respondents owning business, 12.5 per cent were shop owners, 5.5 per cent had workshops, while very less percentage had either a dhaba or factory. Out of 30 laborers, 5.5 per cent were working in a factory, 5 per cent in farms, 2 per cent in shops while 1.5 per cent were in some other type of labour intensive work. Out of 22 respondents who were in private jobs, most of them were working as technical staff.

This indicates how diverse the information needs of rural respondents can be and a wide scope of ICT usage by rural consumers. Farmers may harness these devices for seeking timely and relevant information related to agriculture, sources of credit, and better market prices thereby improving the agricultural productivity, farmers' income, well-being of family and improved livelihood. Businessmen can efficiently manage their inventory, payrolls, accounts, networks and business relationships while students can use it for educational needs such as completing assignments, accessing web resources and e-books, applying for various jobs or pursuing educational programmes through distance learning.

With respect to their income levels, majority of the respondents had earnings between 10,000-15,000 per month (34%), followed by 5000-10,000 (30.5%). For the remaining respondents it was found that 21.5 per cent were having income between 15,000-20,000 while only 13.5 per cent had income above 20,000 per month. This signifies that respondents can afford an average priced ICT tool. They may not be willing to spend much on ICT services and may adopt if affordable within this income.

Out of 200 respondents, it has been found that all of them were having at least one mobile/smartphone at their disposal. It is not surprising to see that mobile was the most popular device owned by rural consumers. Various mobile apps such as Kisan Suvidha, Krishi Mitr, Pusa Krishi, Kheti-badi to name a few are helping farmers in agriculture and achieving sustainable development. However, possession of other information technology devices such as computer, laptop, tablet, notebook *etc.* was negligible. Only 3.5 per cent had tablets while 2 per cent had laptops. Consumers prefer to buy information technology devices through cash payment.

If the respondents had higher income then they had a tendency to purchase IT devices other than mobile or smart phones.

It was found that the prime reason for not possessing ICT devices such as laptop, tablet or notebook in large numbers was the lack of proper infrastructure and high cost (Table 2). Except mobile and smart phones, they did not perceive any use of possessing other information devices. Many respondents felt that digital illiteracy, language barrier and insufficient income are significant barriers for owning a laptop or tablet but no one reported lack of education or illiteracy as the reason for non-possession of an IT tool/device. The rural respondents were able to use the devices in English but responded that they would be more comfortable in using the devices in their native or local language. This has a strong policy indication. If the mobile apps are in regional language of rural consumers, it will break the literacy barrier and make the information simple to understand.

Table 2. Reasons for not owning other ICT devices by Rural Respondents

Reason for not possessing IT devices	Frequency	% of respondents
Lack of proper infrastructure in the area	188	94.0
No perceived use	162	81.0
High cost of IT devices	114	57%
Lack of digital literacy	89	44.5
Language barrier	69	34.5
Low Income	42	21.0
Lack of parental/peer support	3	1.5
Illiteracy	0	0

N=200

Analysis

Rural Respondents' Demographics and Ownership of Information Technology Devices

It was observed that there is no significant relationship between age, gender, educational qualification and ownership of information technology devices.

Table 3. Chi-square Analysis with regard to Age, Gender and Ownership of IT Devices

Particulars	Value	df	Asymp. Sig. (2-sided)
1. Gender v/s Ownership of IT device			
i.) Laptop	.331	1	.565
ii.) Tablet	.588	1	.443
iii.) Dongle	.081	1	.775
2. Age v/s Ownership of IT device			
i.) Laptop	1.052	3	.396
ii.) Tablet	1.870	3	.195
iii.) Dongle	.259	3	.795

Note:

*All respondents had Mobile/smartphone

* None had notebook/netbook, computer, router & modem

The chi square value for the relationship between monthly family income and ownership of the various IT devices is shown in Table 4. Chi square value for laptop is 14.112 and its corresponding p value is 0.007. Since the p value is less than 0.05, there is a significant relationship between the monthly income and possession of laptop. For other IT devices there is no significant relationship between their ownership and family income.

Table 4. Chi-square Analysis with regard to Income and Ownership of IT Devices

Particulars	Value	df	Asymp. Sig.(2-sided)
1. Monthly income v/s Ownership of IT device			
i.) Laptop	14.112	4	.007
ii.) Tablet	4.250	4	.373
iii.) Dongle	3.670	4	.453

Note:

*All respondents had Mobile/Smartphone irrespective of income

* None had notebook/netbook, computer, router & modem

Rural Respondents' Demographics and Comfortability of Using Information Technology in English Language

Table 5 reveals that the Chi square value for relationship between age group and comfortability in using IT in English is 24.034 and its corresponding p value is 0.001<0.05. Since the p value is less than 0.05, there is a significant relationship between the age group and comfortability in using IT in English. The Chi square value for relationship between the gender and comfortability in using IT in English was 1.865 and its corresponding p value is 0.393>0.05. Since the p value is more than 0.05, there is no significant relationship between the gender and comfortability in using IT in English. The Chi square value for relationship between highest education and comfortability in using IT in English was 78.392 and its corresponding p value is 0.000<0.05. Since the p value is less than 0.05, there is a significant relationship between the highest education and comfortability in using IT in English. The chi square value for relationship between occupation and comfortability in using IT in English was 47.805 and its corresponding p value is 0.000<0.05. Since the p value is less than 0.05, we can conclude that there is a significant relationship between the occupation and comfortability in using IT in English. The chi square statistic corresponding to the relationship between monthly income of the family and comfortability in using IT in English was 30.549 and its corresponding p value is 0.000<0.05. Since the p value is less than 0.05, we can conclude that there is a significant relationship between the monthly income of the family and comfortability in using IT in English.

Table 5. Chi-square Analysis with regard to Comfortability of using IT in English Language

Particulars	Value	df	Asymp. Sig. (2-sided)
1. Comfortability of using IT in English Language			
i.) With Age	24.034	6	.001
ii.) With Gender	1.865	2	.393
iii.) With Educational qualification	78.392	8	.000*
iv.) With Occupational Status	47.805	10	.000*
v.) With Monthly Income	30.549	8	.000*

People who are younger are more comfortable with English language as compared to those who are older. Graduates and Post graduates are somewhat comfortable with using English language while respondents who have passed only secondary school or high school are not very comfortable in using English language. As the monthly income increases they have better resources and opportunities of learning and find ease in the use of English as a medium of communication.

Rural Respondents' Demographics and Comfortability of Using Information Technology in Local Language

Table 6 reveals that the chi square value for relationship between age group and comfortability in using IT in local language is 1.31 and its corresponding p value is 0.727>0.05. Since the p value is more than 0.05, there is no significant relationship between the age group and comfortability in using IT in local language. The chi square value for relationship between gender and comfortability in using IT in local language is 2.371 and its corresponding p value is 0.124>0.05. Since the p value is more than 0.05, we can conclude that there is no significant relationship between gender and comfortability in using IT in local language.

The chi square statistic corresponding to the relationship between highest education and comfortability in using IT in local language is 4.815 and its corresponding p value is 0.307>0.05. Since the p value is more than 0.05, we can conclude that there is no significant relationship between the highest education and comfortability in using IT in local language.

The Chi square statistics for relationship between occupation and comfortability in using IT in local language was 3.759 and its corresponding p value is 0.585>0.05. Since the p value is more than 0.05, we can conclude that there is no significant relationship between the occupation and comfortability in using IT in local language. The chi square statistic corresponding to the relationship between monthly family income and comfortability in using IT in local language was 6.852 and its corresponding p value is 0.144>0.05. Since the p value is more than 0.05, we can conclude that there is no significant relationship between the monthly family income and comfortability in using IT in local language.

Table 6. Chi-square Analysis with regard to Comfortability of using IT in Local Language

Particulars	Value	df	Asymp. Sig. (2-sided)
1. Comfortability of using IT in Local Language			
i.) With Age	1.310[a]	3	.727
ii.) With Gender	2.371[a]	1	.124
iii.) With Educational qualification	4.815[a]	4	.307
iv.) With Occupational Status	3.759[a]	5	.585
v.) With Monthly Income	6.852[a]	4	.144

Therefore, there is no significant relationship between demographics and comfortability of using IT devices in local language. All are at ease irrespective of age, gender, education, income or occupation.

The most preferred device that rural respondents wanted to own was mobile/ smartphone due to its ease of use and wider application (Table 7). Laptop was the second preference, followed by netbook/notebook being the third preference, tablet being the fourth preference and computer being the last preference. The size of the device, portability, and usefulness were verbally emphasized as the major reasons of preference.

Table 7. Devices preferred to be owned by Rural Respondents

IT Device	1st Preference		2nd Preference		3rd Preference		4th Preference		5th Preference	
	No.	%	No.	%	No.	%	No.	%	No.	%
Computer	4	2	7	3.5	38	19	24	12	127	63.5
Laptop	16	8	104	52	41	20.5	35	17.5	4	2
Mobile/Smartphone	177	88.5	17	8.5	6	3	0	0	0	0
Netbook/Notebook	0	0	42	21	82	41	61	30.5	15	7.5
Tablet	4	2	28	14	33	16.5	79	39.5	56	28

N=200

Influence of Social Group on Purchase of IT Devices

As seen from Table 8, respondents who were influenced by the family/relatives/ friends/ office/ work group for making a purchase decision were extremely limited and they were making individual decisions without involving other members, to decide on the IT tool.

Table 8. Influence of Social Group for making a Purchase Decision

Social Group	Frequency	% of respondents
Family/Relatives	18	9
Peers/Friends	6	3
Teachers/Experts	0	0
Office/work group	1	0.5
Individual decision	175	87.5

N=200

*As many as 87 per cent of the rural respondents made an individual decision for purchasing the Information technology tool.

Internet Usage

As can be seen from Table 9 the usage of internet per week amongst rural respondents has been found to be low. It is observed that though the number of internet connections have increased over the years, most of the rural respondents were using internet for only 2-4 hours per week. The age group between 41-60 years had limited internet connection and usage which can be seen from Table 10.

Table 9. Frequency Distribution with respect to Internet Usage in no. of hours/week

No. of Years	**Frequency**	**% of respondents**
< 1 year	26	13
1-2 year	120	60.0
>2 years	31	15.5
Usage/week	**Frequency**	**% of respondents**
< 2 hours	16	9.03
2-4 hours	142	80.22
4-6 hours	18	10.16
>6 hours	1	0.5

N=177 (Since 23 respondents had no internet connection)

* Almost 80 per cent of the users were using internet for about 2-4 hours per week.

Table 10. Cross tabulation of Age in Years v/s Frequency of using Internet Connection in one Week

Age	**Less than 2 hours**		**2-4 hours**		**4-6 hours**		**More than 6 hours**		**No internet**	
	No.	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
19-30	3	18.8	63	44.4	9	50	1	100	0	0.00
31-40	6	37.5	65	45.8	9	50	0	0.00	3	13
41-50	6	37.5	12	8.5	0	0.00	0	0.00	19	82.6
51-60	1	6.2	2	1.4	0	0.00	0	0.00	1	4.3
Total	16	100	142	100	18	100	1	100	23	100

N=200

* Almost all the age groups are using internet for 2-4 hours per week.

Rural Respondents' Demographics and their Internet Usage Behaviour

There is significant relationship between age and frequency of internet usage/week (Table 11). A higher percentage of people who are young use internet more often as compared to those who are older. With increase in educational qualification a higher percentage of people use internet for 2-4 hrs/week.

Table 11. Chi-square Analysis with regard to Frequency of Internet Usage per Week

Particulars	Value	df	Asymp. Sig. (2-sided)
1. Frequency of Internet usage /week			
i.) With Age	82.400	3	.000*
ii.) With Gender	2.568	1	.15
iii.) With Educational qualification	56.138	4	.000*
iv.) With Occupational Status	14.67	5	.23
v.) With Monthly Income	17.868	4	.332
2. Years of Internet usage			
i.) With Age	72.203		.000*
ii.) With Gender	3.314		.346
iii.) With Educational qualification	55.903		.000*
iv.) With Occupational Status	32.43		.504
v.) With Monthly Income	25.604		.012

In addition, a higher percentage of the younger age group are using internet for more number of years as compared to the higher age group. A higher percentage of more educated people are using internet for 1-2 years as compared to less educated people. The percentage of people using internet for 1-2 years increases with the increased monthly family income.

Most of the respondents were very comfortable if information was accessible in their local language. They were somewhat comfortable even if it is available in English language.

Discussion

No respondent had a computer, some respondents having monthly income above Rs. 20,000 had laptops, while respondents having monthly income between Rs. 10,000 - 20,000 had tablets, notebooks, possessed dongle and routers. It was surprising that not even a single respondent had a personal computer. However, all the individuals irrespective of their income, age and qualification had a mobile/ smartphone at their disposal purchased through cash. Since most of the respondents were using mobile or smartphones, formulating appropriate text messages for the farmers and empowering them to use mobile phones can lead to increased adoption of latest practices.

The main factors responsible for the ownership of limited IT devices were lack of proper infrastructure in the area, no perceived use, high cost of the IT devices, low income and lack of digital literacy. Respondents also had a difficulty with the language. Some were having lack of parental/peer support too. These were some of the reasons emphasized for not using the IT devices.

Rural respondents who were comfortable in using IT devices in English were mainly unmarried males belonging to the age group of 19-30 years. They were primarily students and had a monthly income between Rs. 10000-15000. The rural respondents who were comfortable in using IT devices in the local language were male graduates between the age group of 31-40 years with the main occupation being farming and had monthly income between Rs. 10000-15000.

Assessing their intention to own an IT tool, it was found that the first preference of the rural respondents for purchasing IT devices in future was mobile/smartphone followed by laptops. They preferred mobile because it was easy to use and carry. The third preference was for a notebook/netbook, fourth for tablets and computers being the last and least preferred. The size of the device and the ease in carrying it were verbally emphasized as the major reasons of preference.

The influence of the social group on rural respondents' decision of purchasing an IT tool was minimum. The majority of the rural respondents exhibited no influence of the social/family/relatives *etc.* but it was an individual decision to purchase the IT devices. They believed in their own choices. However, as compared to males, female respondents were more influenced by their families in making a purchase decision.

The internet usage behaviour of the rural consumers is not very different from that of urban consumers. Majority were having internet connection since the last two years. Most of them were using it for 2-4 hours per week. Majority were using the internet services of Idea followed by Vodafone and Airtel. However, while comparing the age groups using the internet services per week it was revealed that majority of the respondents between the age group of 19-40 years were using internet for at least 2-4 hours per week and age group of 41-60 years did not have an internet connection except for a few.

Policy Implications and Conclusion

The main aim of the study was to assess adoption of Information technology by rural consumers, their ownership and preferences towards IT devices and the

effect of demographics over ownership, usage and preference. The study revealed new and important information regarding the adoption of information technology devices. The study also revealed that majority of the rural consumers were having internet connection. However, some of the challenges that are of concern are rural consumers' resistance to change their behaviour, the socio-economic backwardness of the rural market, problem of language, and a feeling of sufficiency *i.e*. no further need or requirement for an advanced technology. Though there is a great impact of the demographics over the adoption of IT devices, however, improper infrastructure, lack of perceived use, high cost *etc.* were also signaled as reasons behind the poor ownership of IT devices.

Tirkaso *et. al.* (2011) reported some major challenges in the rural areas regarding the implementation of policies. He also reported that socio-economic features like age, gender, marital status, size of the family are related to the adoption and application of the ICT. Other factors are the low degree of awareness among rural consumer about the importance of these technologies. According to Rajesh (2003) the major problems related to ICT adoption were policy structure of the government, high user charges, infrastructure problems, political, economic, technological and cultural factors *etc.* These research findings support the discussion of present study.

This study is useful in guiding policy makers and service providers. An attempt to address the concerns of rural consumers while designing consumer driven services would narrow down the gap between planning and implementation of various projects. The adoption of IT devices in rural areas will not only enhance the literacy rate of rural consumers but also make them more employable. It will give them new opportunities in learning and pave a path for their development which in turn will bring a change in the scenario of the rural economic environment.

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