Aarhat Multidisciplinary International Education Research Journal (AMIERJ)
A Peer Reviewed Multidisciplinary Journal UGC Approved Journal No 48178, 48818
Impact Factor 5.18 ISSN 2278-5655

DIGITAL DIVIDE AMONG COLLEGE STUDENTS IN PERNEM TALUKA OF GOA: A GENDER BASED ANALYSIS

Dr (Mrs) Roshan Vasu Usapkar
Asst Prof in Commerce, S.S.A. Govt College of Arts & Commerce
Pernem, Goa

Abstract
The term digital divide is used to describe the discrepancies between people who have access to the use of new information and communication tools, and people who do not have the resources and access to the technology. In this paper an attempt has been made to find out whether digital divide exist among college students in Pernem Taluka of Goa across gender. Analysis was done with the help of SPSS. However a significant difference was noted across the gender with regards to the medium of use of internet and the reasons or purpose of use of internet.

Keywords : Digital divide, Gender based, Technology

1.1Introduction

The term 'digital divide' was probably coined by Larry Irving, former Assistant Secretary of Commerce for Communications and Information during the Clinton administration and the ex President of the Irving Information Group, Washington DC (2)

The use of Information Communication Technologies, **ICT** had developed rapidly since the beginning of 1990s. the use of internet or ICT is related to a new form of literacy ie " Digital Literacy". According to Allan Martin " *Digital literacy is the awareness , attitude and ability of individuals to appropriately use digital tools and facilities to identify, access, manage, integrate, evaluate, analyse and synthesize digital resources, construct new knowledge, create media expression, and communicate with others, in the context of specific life situations, in order to enable constructive social actions and to reflect upon this process*".*(2)*

The term digital divide is used to describe the discrepancies between people who have access to and the resources to use new information and communication tools, such as internet and people who do not have the resources and access to the technology. The term also describes the discrepancies between those who have skills, knowledge and abilities to use the technologies and media and those who do not. The digital divide can also exist between those living in the rural areas and those living in the urban areas, between the educated and uneducated, between economic classes and on a global scale, between more or less industrially developed nations Digital divide is the term that refers to gap across demographics and regions that have access to ICT and those who do not have. Rapid expansion of the internet services and information technology has generated new social status and added layers of opportunities to human communication, information and user behaviour.*(5)*
A typology of needs of media user can be expressed as *(3)*

1. Cognitive Needs – For information, knowledge and understanding of our environment
2. Affective Needs – For aesthetic , pleasurable and emotional experiences
3. Personal Integrative Needs- For credibility, confidence, stability and personal status
4. Social Integrative Needs – For contact with family, friends and the world
5. Escapist Needs – For escape, diversion and tension release.

1.2 Brief Introduction about Pernem, Goa

The state of Goa is situated on the west cost of India and is similar in physical features to the neighboring region of Karnataka and Maharashtra. The geology, ethnography, natural resources, cultural and even socio-economic evolution in general and ancient ruling dynasty of the land of Goa. On the contrary, the land of Goa, in all aspects is more or less similar to the adjacent coastal land of India, namely konkan and Malabar cost. But some features lend the Goan land-scape and scenery a distinctive magnetism of their own. Although on the map of India, Goa is small State, it is a treasure house of vast traditions, great culture, natural wealth and

long history. The land which we call Goa is narrow strip of earth 105 km long and 65 km wide covering a total area of 3,702sq.kms.

Pernem is one of the talukas of Goa falling in the new conquest, comprising of majority of hindu population. It lies to the north of Goa sharing its boundaries with Maharashtra in the north , to the south of Pernem is Bardez taluka and towards the east is the Bicholim Taluka, while the Arabian sea is towards the west. The most common occupation people of Pernem engage themselves are agriculture, farming, spice and cashew plantations, sand mining, fishing, tourist related activities etc. Pernem unlike the Bardez, Salcete, Tiswadi and Mormugoa is comparatively not so developed area. The level of education is also less as compared to other talukas of Goa. Majority of the children in this taluka are the first generation college goers in their families

2.1 Review of Literature

Professor David Souter et al (2005) conducted a study of The Economic Impact of Telecommunications on Rural Livelihoods and Poverty Reduction in India (Gujarat), Mozambique and Tanzania. The findings on the social and knowledge-gathering values of the telephone were found to be consistent across all significant socio-economic groups – including economic and educational status groups – as well as by gender and other demographic criteria.*(6).* Preeti Dubey et al (2010) examined the Digital Divide Factors in Jammu and Kashmir Perspective. They found that the government is providing facilities for internet access but awareness of these initiatives is still lacking. People residing in rural areas are hesitant to use internet due to lack of English language proficiency.*(7).* Monique Volman (2005) critically examined the accessibility and attractiveness of different types of ICT applications in education for girls and boys, and for pupils from families with an ethnic minority background as well as from the majority population in the Netherlands by the use of the assessment of the knowledge of the subjects in handling the various ICT applications.*(4).* Adeyinka Tella and S.M.Mutula, (2008), carried out an extensive study, which employed a descriptive survey method to discover the differences in the computer literacy of the undergraduate students based on gender, at the

University of Botswana. The questionnaire consisted of questions using Likert scale based on the knowledge of user on handling word applications, Internet knowledge, online catalogs, etc. Statistical tools like Descriptive statistics and t-test were employed in the analysis of data.*(1)* Gibson Mhaka (2017) stressed that the use of Information Communication Technologies are proving to be powerful tools for accelerating the achievement of the Sustainable Development goals set by the United Nations. He opines providing women and girls equal to ICTs as compared to their male counterparts would bring about a holistic developments in the economic and social arenas.*(8)*. Many studies have been undertaken internationally and a few nationally to study the digital divide gap. But no study was found to be have done on demographic digital divide especially in Goa.

2.2 Problem of the study

From the literature review it was evident that digital divide exists across demographic factors. But the question persisted whether given the same age, same educational qualifications and the same geographical location of the respondents, does the digital divide still exist. Thus an attempt has been made to study and analyse whether the digital divide among college students in Pernem, Goa exist across gender.

3. 1 Objectives of the Study

1. To analyse the gender wise ownership of mobile by the respondents.
2. To analyse the gender wise usage of internet.
3. To analyse the frequency of internet use across gender.
4. To analyse the medium of usage of internet across gender.
5. To examine the reasons for the usage of computer across gender.
6. To analyse the reasons for the use of internet.

3.2. Limitations of the study.

1. Due to shortage of time the study is limited to the college students of Pernem.
2. The digital divide analysis is restricted only across gender, as the group of student respondents ie sample selected belong to the similar age group and have the same educational qualifications.

3.3 Hypothesis

The following hypothesis has been framed to study and test the problem whether there exist any digital divide across gender of the same age.

1. H0 : There is no difference across the gender in the Ownership of mobile
2. H0: There is no difference across the gender in the Usage of internet
3. H0: There is no difference across the gender in the Frequency of usage of internet
4. H0: There is no difference across the gender in the Medium of usage of internet
5. H0: There is no difference across the gender in the source of availing internet
6. H0: There is no difference across the gender in the Reasons for usage of computer
7. H0: There is no difference across the gender in the Reasons for usage of internet

3.4 Methodology

Sample and Data Collection- Both primary and secondary sources of data have been made use of for the purpose of data collection. Primary data was collected from a convenient sample of 50 college students of Pernem, to whom questionnaire was administered with the help of ICT, ie telephone, email , whatsapp. The follow up was made through constant phone calls. Books, journals, internet formed the secondary source of data.

Data Analysis Tools: Simple tabulations, Percentage analysis and Chi square analysis with the help of SPSS has been used for the purpose of analysis.

4. Data Analysis

In this section, the data collected has been analysed with regards to the gender wise ownership, use of internet, frequency of use, medium of use and reasons for usage of computer and internet.

Table No 4. 1 Age across Gender calculation

Gender	Age										Total No %	
	17 years No %		18 years No %		19 years No. %		20 years No %		20 + years No %			
Male	17	59%	7	24%	4	14%	1	3%	0	0%	29	100%
Female	9	43%	8	38%	1	5%	1	4%	2	10%	21	100%
Total	**26**	**52%**	**15**	**30%**	**5**	**10%**	**2**	**4%**	**2**	**4%**	**50**	**100%**

Source: Primary Data

The distribution of respondents across age and gender is shown in the Table No 4.1. It can be noted that 59% of the male respondents were 17 years of age, followed by 24% male belonging to 18 years of age, 14% were 19 years of age and 3% were 20 years of age. Among the female respondents, 43% were 17 years old, followed by 38% female respondents belonging to 18 years of age, 5% were 19 years and 4% female respondents were 20 years of age.

Table No 4.2.1 Gender wise ownership of Mobile

Gender	Own Mobile				Total No %		Pearson Chi Square Sig
	Yes No %		No No %				
Male	28	97%	1	3%	29	100%	0.70
Female	17	81%	4	19%	21	100%	
Total	**45**	**90%**	**5**	**10%**	**50**	**100%**	

Source: Primary Data

Analysis of whether the respondent across gender owns a mobile is depicted in the Table No 4.2. It can be seen that 97% of the male and 81% of the female respondents own a mobile, while the remaining respondents dint have a mobile of their own. A chi square test was applied to test whether there exist any difference across the gender with regard to the ownership of mobile. The P value of 0.70, being more than significant value of 0.05, indicates that there is no significant difference across the gender as far as the ownership of the mobile is concerned. Thus the null hypothesis Ho 1 is accepted, signifying no difference across the gender and ownership of mobile.

Table No 4.2.2. Gender wise ownership of landline at home

	Have Landline				**Total**	
Gender	**Yes**		**No**			
	No	**%**	**No**	**%**	**No**	**%**
Male	3	10%	26	90%	29	100%
Female	6	29%	15	71%	21	100%
Total	**9**	**18%**	**41**	**82%**	**50**	**100%**

Source: Primary Data

The analysis of the ownership of a landline phone at the residence is exhibited in the Table No 4.2.2.It is evident from the data that 90% of the male and 71% of the female respondents did not own a landline at home. Only 3% and 6% male and female respondents respectively had a landline telephone at home.

Table No 4.2.3. Gender wise ownership of computer/laptop

Gender	Have Computer / Laptop at home				Total	
	Yes		No		No	
	No	%	No	%	%	
Male	29	100%	0	0%	29	100%
Female	19	91%	2	9%	21	100%
Total	**48**	**96%**	**2**	**4%**	**50**	**100%**

Source: Primary Data

The Gender wise ownership of computer or a laptop among the respondents is examined in the Table No 4.2.3. 100% of male and 91% of female respondents had a computer/ laptop. The main reason for this is the , Government of Goa initiative to provide with every std XII student with a computer which started a decade ago, in the recent years laptops are distributed to the students. In the year 2014-15 laptops of Lenovo make were distributed to the students.

Table No 4.2.4.Gender ownership of internet facility

Gender	Have Internet facility at home								Total	
	NO		Broadband		Wireless		USB		No	
	No.	%	No	%	No	%	No.	%	%	
Male	21	72%	0	0%	2	7%	6	21%	29	100%
Female	14	67%	1	5%	2	9%	4	19%	21	100%
Total	**35**	**70%**	**1**	**2%**	**4**	**8%**	**10**	**20%**	**50**	**100%**

Source: Primary Data

The analysis whether the respondents owns an internet facility is conducted in the Table NO 4.2.4. From the table it is visible that 72% male and 67% female respondents did not own an internet facility. While 21% male and 19% female respondents had USB internet connection, while 7% male and 9% female respondents had wireless internet facility.

Table No 4.3 Gender wise frequency of Usage of internet

Gender	Frequency of use of Internet						Total No %		Pearson Chi Square Sig
	Daily No %		Weekly No %		Fortnightly No %				
Male	12	41%	14	48%	3	11%	29	100%	0.960
Female	8	38%	11	52%	2	10%	21	100%	
Total	**20**	**40%**	**25**	**50%**	**5**	**10%**	**50**	**100%**	

Source: Primary Data

The frequency of usage of internet is depicted in the Table No 4.3. It is visible that 48% male respondents used internet on a weekly basis, while 41% of the male respondents used internet daily. Among the female respondents also 52% of them mad e use of internet on a weekly basis, followed by 38% female respondents using internet on a daily basis. A chi square test was employed to test whether there exist any difference in the frequency of usage of internet among male and female respondents. The test revealed a P value of 0.960, being higher than the significant value of 0.05. Thus, the null HO2 is accepted and it can be concluded that there exist no difference in the frequency of usage of internet across gender.

Table No 4.4 Gender wise medium of use of Internet

Gender	Medium of use of Internet						Total		Pearson Chi Square Sig
	Mobile		Computer		Both				
	No	%	No	%	No	%	No	%	
Male	11	38%	14	48%	4	14%	29	100%	0.039
Female	3	14%	9	43%	9	43%	21	100%	
Total	**14**	**28%**	**23**	**46%**	**13**	**26%**	**50**	**100%**	

Source: Primary Data

The analysis of the medium of use of Internet by the respondents across the gender is made in the Table No 4.4.It can be noticed that 48% of the male respondents made use of the internet on the computer, followed by 38% male respondents using internet on the mobile phone and the rest 14% used internet on both mobile as well as computer. A far as the female respondents were concerned equal number of respondents i.e. 43% used internet on computer and both computer and mobile, followed by 28% of them using it on the mobile. A chi square test was used to test the H03 and find out whether there exists any difference in the medium of use of internet across gender. The test revealed the P value of 0.039, which was lesser than the significant value of 0.05, thus the null hypothesis H03 was rejected, and the alternate hypothesis was accepted signifying that there exists difference in the medium of use of Internet across gender.

Table No 4.5 Gender wise source of availing internet facility

Gender	Source of availing internet facility								Total		Pearson Chi Square Sig
	Home		Friends/ Relatives house		Cyber		College				
	No	%	No	%	No	%	No	%	No	%	
Male	7	24%	2	7%	12	41%	8	28%	29	100%	0.177
Female	5	24%	0	0%	14	67%	2	10%	21	100%	
Total	**12**	**24%**	**2**	**4%**	**26**	**52%**	**10**	**20%**	**50**	**100%**	

Source: Primary Data

The source or place from where the respondents avail internet facility is analyzed in the Table No 4.5. It can be seen that 41% of the male respondents from Pernem, use internet facility from cyber, followed by 28% of the male respondents using internet from college, followed by 24% male using internet at home. A sizeable number of males, i.e 7% of the respondents use internet at their friends or relative's house. As far as the female respondents are concerned, majority i.e 67% of the female respondents from Pernem use internet facility at the cyber, followed by 24% of the female respondents using internet at home. The null hypothesis H04 was tested using chi square, the P value derived was 0.177, which was much higher than 0.05, thus the null hypothesis was accepted and it can be concluded that there exist no significant difference in the source of availing internet across gender.

Table No 4.6 Gender wise Reasons for usage of Computer

Gender	Reasons for usage of Computer										Total		Pearson Chi Square Sig
	Word, Excel , Powerpoint		Games		Internet		Academics		Data storage				
	No	%	No	%	No	%	No	%	No	%	No	%	
Male	0	0%	6	21%	19	66%	3	10%	1	3%	29	100%	
Female	3	14%	1	5%	13	62%	4	19%	0	0%	21	100%	
Total	**3**	**6%**	**7**	**14%**	**32**	**64%**	**7**	**14%**	**1**	**2%**	**50**	**100%**	0.101

Source: Primary Data

The reasons for usage of computer by the respondents across gender is analysed in the Table No 4.6. It is evident from the table that majority of the male respondents i.e 66% use computer inorder to use internet, followed by 21% of the male respondents use computer to play games, followed by academics by 10% of the male respondent. Majority of the female respondents i.e 62% also used computer for internet purpose, followed by 19% female respondents using computer for academic purpose. A chi square test was applied to test whether there exist any significant difference across the gender in the Reasons for usage of computer. The P value derived of 0.101 signified that there exists no difference across the gender in the Reasons for usage of computer.

Table No 4.7. Gender wise Reasons for use of Internet

Gender	Reasons for usage of Internet				Total		Pearson Chi Square Sig
	Chatting/Social Media		Academics				
	No	%	No	%	No	%	
Male	29	100%	0	0%	29	100%	0.036
Female	18	86%	3	14%	21	100%	
Total	47	94%	3	6%	50	**100%**	

Source: Primary Data

The reasons for using internet by the respondents was analysed in the Table No 4.7. The reasons analysed were email, chatting/social media, banking, music download, video download, news, academic etc. The data revealed that , all the male respondents mainly used internet for chatting purpose, while majority of the female respondents ie. 86% used internet for chatting or social media, followed by the rest female respondents using internet for academic purpose. A chi square test was applied to test whether there exist any significant difference across the gender in the Reasons for usage of internet. The P value derived of 0.036, was lower than the significant value of 0.05. Thus the Null hypothesis i.e H0: There is no difference across the gender in the Reasons for usage of internet was rejected and it can be concluded that there exists significant difference across the gender in the Reasons for usage of computer.

5. Findings, Conclusion and Suggestions

This section puts forward the findings, conclusion and suggestions that aroused from the study

5.1. Findings

The major findings of the study are presented below.

- It was found that59% male and 43% female respondents were of 17 years of age.
- Majority of the respondents i.e 97% male and 81% female owned a mobile phone. Interestingly 90% male and 71% female respondents has no landline facility at their residence. All the male and 90% female respondents were found to own computer/laptop. It must be noted that 72% male and 67% female did not have internet.
- It was seen that 48% male and 52% female used internet on a weekly basis
- Most of the respondents ie 48% male and 43% female were found to use internet from his computer/laptop.
- Similarly 41% male and 67% female used internet at cyber, followed by 28% male using internet at college. Only 24% male and female respondents used internet from home.
- More than 60% respondents both male and female were found to use computer mainly for internet purpose .
- The main reason for using internet according to male respondents was chatting or use of social media, followed by playing games. While female respondents also found to use internet mainly for the purpose of chatting and use of social media, but followed by use of internet for academics.

5.2. Conclusion

Thus from the above study it can be concluded that ICT has penetrated even in the rural and remote place of Goa, thanks to the Government initaitives and policies. The study basically concentrated on the digital divide, especially across the gender in Pernem. Keeping the socio-economic background of the Pernem taluka and the Govt of Goa policy with regards to Digital Goa in mind, it was very much evident from the study that the major reason for owning a computer/ laptop was the Govt of Goa initiative. As per this initiative every Std XII student was provided with a laptop inorder to eradicate the digital gap among the students, among those who have and those who don't have.

Though the students were provided with the computer/laptop, it was surprising to note that majority of the students i.e 72% male and 67% female did not have internet. Because of which 41% male and 67% female used internet at cyber, followed by 28% male using internet at college. Further the frequency of use of internet was also weekly. This is the reason the students in Pernem lag behind as far as the use of ICT is concerned, and further creating not only a digital divide, but also a knowledge gap.

The various test applied signified that there was no difference among the male and female respondents as far as the ownership of mobile, frequency of use of internet, source of use of internet and the purpose of using computer is concerned. However a significant difference was noted across the gender with regards to the medium of use of internet and the reasons or purpose of use of internet. Thus it can be said that the digital divide does not exist among male and female students with regards to the usage of ICT especially computers and internet, but gap did exist across gender with regard to the medium and purpose of use of internet. The use of ICT was found to be more for social integrative needs and less of cognitive needs.

5.3. Suggestions

On the basis of the above study the following suggestions can be made.

- As the Government of Goa had taken steps to provide every student with a laptop of a std XII student, a tablet for a std VIII student, some steps must be taken at the Government level to get parity with regards to the knowledge and use of internet.
- At the college or institutional level, more courses on use of internet, goods and bad of internet use, ethical use of internet etc. must be implemented. This suggestion is made as students are found to use internet mainly for the purpose of chatting and use of social media. Besides chatting male respondents were found to use internet for playing games. Thus steps must be taken to inculcate the habit of right and ethical use of internet.
- Steps must be taken to stimulate and cater to the cognitive needs.

5.4. Scope for further research

Further in-depth study can be made at state level or taking various demographic segments. Scope exist to conduct Inter demographic i.e cross educational groups, age groups, occupations, regions, inter state, across country etc.

6. Bibliography

1. Adeyinka Tella and S.M.Mutula. (2008). Gender differences in computer literacy among undergraduate students at the university of botswana: implications for library use. *Malaysian Journal of Library & Information Science,* Vol.13, no.1, 59-76
2. Allan Martin. (2005). University of Glasgow, DigEuLit – a European Framework for Digital Literacy: a Progress Report. *Journal of eLiteracy.* Vol 2.
3. Katz, E., Gurevitch, M., and Haas, H.(1973). On the use of the media for important things. *American Sociological Review*, No 38, 164-181
4. Monique Volman, Edith van Eck, Irma Heemskerk and Els Kuiper. (2005). New technologies, new differences. Gender and ethnic differences in pupils' use of ICT in primary and secondary education .*Computers & Education* No 45. 35–55
5. Neil Selwyn.(2002).Defining the 'Digital Divide': Developing a Theoretical Understanding of Inequalities in the Information Age. Cardiff University – School of Social Sciences. United Kingdom.
6. Prof David Souter (2005). *The Economic Impact of Telecommunications on Rural Livelihoods and Poverty Reduction.* A study of rural communities in India (Gujarat), Mozambique and Tanzania, Department for International Development.
7. Preeti Dubey et al (2010). A Study to Examine the Digital Divide Factors: Jammu and Kashmir Perspective, *BIJIT - BVICAM's International Journal of Information Technology*. Bharati Vidyapeeth's Institute of Computer Applications and Management (BVICAM), New Delhi