

# Urban E–Inclusion: An Empirical Research

I. Yabesh Abraham Durairaj, B. Lakshmi, D. Chitra



**Abstract—** In the contemporary picture there is conjoint consensus amongst all the policy makers from across the sphere that devoid of ICT and digital inclusion; the growth of an individual is stalled. Specially in developing economy like India, where poverty eradication and employment generation are foremost objectives; digital inclusion is a must. Considering factors like lack of infrastructure, primary education and availability affordable technologies and others, the strategic intervention and collaborative efforts by government and non-government organizations is indispensable. The diffusion of new Information and Communication Technologies (ICTs) like computers and Internet provides great opportunities for the well-being of people in developing countries. Does this covenant hold on for defamed socioeconomic groupings? In examining the differences in gender we have used the notion of E-inclusion-estimated by different attributes such as skills, user access to digital devices. In exploring the factors for digital inclusion we found tertiary education and the ability to use ICTs significant. The study follows Descriptive research design. The sample consisted of people located in Chennai city. The researcher adopted structured questionnaire to collect the responses from the respondents. The main objective of the study was to understand and analyze the access to digital devices and skills required. Suitable hypotheses were framed and tested to support the study findings. The responses were analyzed using both expository statistics and inferential statistics. The outcomes additionally guide the dispute that the argument of digital inclusion needs to be examined in terms of the exclusive information needs of several socioeconomic groupings and in unique social contexts. Though the challenges that are hindering the effective digital inclusion of individuals and organizations will continue to change and accordingly government should work in the direction of building resilient, better partnerships, operating collected, to support people and organizations benefit from the internet and ICT.

**Keywords:** Gender, digital inclusion, social inequality, public access, ICTs.

## I. INTRODUCTION

Digital Inclusion is subsequently sensitive with discussing imbalances, where people who are not able to ingress the affordability of technologies are underprivileged, censured in society and so excluded digitally. In extension to uniformity,

clear-cut and tacit descriptions of digital inclusion enclose numeral related models:

- Access
- Use

## II. ACCESS AND DIGITAL INCLUSION

Access with regards to E-inclusion is commonly addressed with regards to the admission to automation. The annotation liable to automation differs and covers Information and Communication Technology (ICT), digital technologies and e-services. The base of this umbrella explains a scope of technologies that incorporates such as cell phones, individual computerized aides, personal computers, the internet, broad bands and digital televisions. There are two important issues that are very often faced in E-Inclusion projects. Primarily, the dispute to provide or not to deliver the best of art technologies and secondly, the disputes in sustaining and upgrading automations as soon as they have dwelt grant.

Controverting on the beam of equitableness, Damarin (2000) suggested the concept of stinginess for E-inclusion projects in edification, in which tutors pursue to make usage of a feeblest expensive tool, which might not really be ‘vest in class’, so as to empower the students to develop “ideal usage” of digital amenities accessible to them at their own environment at which they are present the most. Damarin plan’s basically cautions the threatens of staging up imbalances in the gateway, in which pupils have an access to aerial technology assets in an area, yet don’t have identical access in other areas that have a significant influence in their breathes. The sustenance and upgrading of the E-resources may become a distinct dispute for E-inclusion happenings that were setup utilizing interim one-off capital outlay that tends to stumble in the long-standing due to absence of repetitive spending and duty. These results in clients who were at first carefully covered, winding up carefully prohibited, because of fizzling or obsolete advancements.

Intellectualizing digital inclusion raises important disputes associated to technological acceptance, the digital divide and the complications of making changes in imbalances. Technological acceptance recites to the concept that providing or existence of technologies is all that is necessary for digital inclusion to happen and for the conversion of humans or societies. The ‘digital divide’ is a routine notion as ‘E-inclusion’ is repeatedly linked with both educational and non-educational sections which talks about the have’s and have not’s; that is people who have open doors to technologies and people who do not have access to technologies.

People having access and not having access to technology to achieve digital inclusion actions are a dispute that can be debated in future.

Manuscript published on November 30, 2019.

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### III. USE AND DIGITAL INCLUSION

Use with regards to Digital Inclusion is generally comprehended in connection to people utilizing, or having the option to utilize, the technologies that they approach. Reporters in this manner every now and again arrange and talk about the digital competencies and skill levels that are required with the end goal for individuals to be digitally included. Morse (2004: p267) for instance, contended that 'each student must create essential innovation education abilities to be managed the chance to turn into a adequate member in the society'. Helspe, Livingstone and Bober, (2004) charted juveniles and youngsters' web proficiency and demonstrated that the more web education abilities pupil had, the most Internet open doors they draw up. Selwyn, Facer (2007: p14) likewise discuss utilizing technology, "savvy avail", locus savvy use is characterized just as utilizing technologies whenever suitable. Digital inclusion isn't in this manner just an issue of guaranteeing that all people utilize ICTs during their time to-day lives, yet a matter of guaranteeing that all people can make what could be alluded to as 'savvy' utilization of ICTs, ie utilizing ICTs as and when suitable.

Just like access to technology as an idea has been very often made easy; same as, the use of technology. There is in any case, a developing acknowledgment that issues, for example, nature of utilization, best use, significant use and non-use should be tended to. Nature of utilization and consequently the stages of digital inclusion might occasionally be associated to the attributes of usage of technologies. Selwyn and Facer (2007) give the case of the potential contrast between looking through the World Wide Web on a cell phone and looking through it utilizing a Personnel Computer. They propose in this way that nature of utilization can shift extensively relying upon issues, for example, technology platform or dimension of availability (for example broadband).

Selwyn and Facer (2007: p14) likewise discuss utilizing technology, "savvy use", where savvy use is characterized as utilizing technologies as and when suitable:

Digital admittance isn't consequently just an issue of guaranteeing that all people utilize ICTs during their time to-day lives; however a matter of guaranteeing that all people can make what could be alluded to as 'savvy' utilization of Information and Communication Technology (ICTs). Insight the impacts use and digital admittance is probably going to include more than insight obstructions to the securing of abilities or skills. It is probably going to include insight a variety of elements that will impact the choices that individuals make about when technology usage is suitable or important in their well being.

An absence of significant usage ... isn't really because of technological variables ... or then again even cognitive variables ... commitment with Information and Communication Technology is batted around a mind boggling blend about social, cognitive, monetary most importantly, rational reasoning. (Selwyn, 2004, p.349)

Aside abiding a certain innovation usage is perplexing; some digital admittance analysts act beginning to discover intriguing outcomes with regards to utilization, non-utilization of technology. For instance, Helsper, Livingstone (2007) have been recognized as the degrees of

utilization with pupil and youngsters. In an examination investigating how grown-ups don't utilize PCs in their day by day lives, Selwyn (2006) recognized a chain of engagement of commitment with technology; running from outright non-clients, to lapsed clients and infrequent clients.

Practicality and anticipated absence of significance or "fit" with current life were repeating subjects when investigating explanations for dimension of technological use. Outcomes like this propose need to encourage the comprehension of how decisions that the individuals make with respect to the nature and degree of their use of technology may be impacted by technological components (for example issues of digital access); individual components (for example aptitude levels) or contingent components (for example "life-fit").

The investigations by Helsper and Livingstone (2007) and Selwyn (2006) are critical for couple of significant motives. Initially, they are critical on the grounds that they interface E-inclusion to ideas of empowerment (for example applying command and decision over technology by taking on choices about suitable or important use of technology). Also, they are significant on the grounds that they challenge a few biases. For instance, if a pupil has ingress to technology yet do not utilize it, there shall be an inclination for the people who not use to be seen as hazardous and for the people who not use to be named as inadequate or ailing in something, typically digital skills either proficiencies.

### IV. DIGITAL INCLUSION IS ABOUT PROSPECTS, RESULTS AND PRAXISES

Intellectualizing digital admittance is being about ingress, leads us to recognize that digital admittance to some extent includes giving uniformity of chances with the goal that all individuals from community can favor by the accordance's that technologies could favor. Intellectualizing digital admittance as seeing about usage and engaging, leads us to recognize that digital admittance is likewise around balance of result. Selwyn (2004: p351) for instance:

"From a perspective, we are troubled about imbalances of chance to access and utilize various types of ICT. Then again, we are concerned likewise with various imbalances of outcome influencing either straightforwardly or in a roundabout way from commitment with these technical knowledge".

Intellectualizing E- inclusion have being around the two chances A and results B, leads us to think about the inquiry: "how we get hands on A to B?" It is thusly critical reporters, for example, Walker and Logan (2009) and Abbott (2007 p6) discuss E-admittance rehearses. Abbott as instance, contends: "it is considerably deeper proper to discuss e-admittance rehearses, a caption that underlines the communication amidst digital instruments, texts and individuals, and spotlights consideration on the action of the utilization of E-technologies by or with individuals with schooling troubles. The more extensive comprehension of the association amidst digital advances, texts and individuals that is frequently, and all the more precisely, portrayed as e-admittance".

**V. RESEARCH OBJECTIVES**

1. To analyze the Gender differences toward digital device usage and access.
2. To know the level of barriers faced by different age group of the respondents.
3. To understand the usage of internet on digital device by the respondents belonging to Government and Private sector.
4. To know whether the digital devices such as Smart Phone, Laptop, and Computer are equally utilized by the respondents.
5. To know the impact of digital device on the respondents working in Government and Private sector.
6. To find the relationship between usage and impact created by digital device.

**VI. HYPOTHESES FORMULATED**

The following hypotheses were formulated to test the research objectives.

- H1. There is no association between Age group of the respondents and Barriers towards Digital Device Access and Usage
- H2. There is no significant difference among mean rank of Job Category of the Respondents with regard to Overall usage of Internet on Digital Device
- H3. Usage of Digital Devices (Smart Phone, Laptop, Computer) is equally distributed
- H4. There is no significant difference among mean rank of Government Sector and Private Sector with regard to overall impact of Digital Device use.
- H5. There is no relationship between Overall Digital Device Usage and Overall Impact of Digital Device.
- H6. There is no significant difference among mean rank of Men and Women with regard to overall Digital Device Usage, Usage of Internet on Digital Device, Impact of Digital Device use and Barriers for Digital Device Access and Usage.

**VII. RESEARCH METHODOLOGY & RESULTS**

The study follows Descriptive research design. The sample consisted of people located in Chennai city. The Sample size for the study was 330 respondents. The researcher adopted structured questionnaire to collect the responses from the respondents. The questionnaire consisted of demographic, multiple choices, Likert 5 point scale questions. The data collected were tabulated, coded and figure out using SPSS software. Both expository statistics and inferential statistics were used to interpret the responses. The inferential statistics include Mann Whitney U test, Chi-Square test for Goodness of Fit, Chi-Square test of Independence, Kruskal-Wallis H test and Pearson Correlation Coefficient.

**VIII. FINDINGS AND DISCUSSION**

*Hypothesis I*

Null Hypothesis: There is no association between Age group of the respondents and Barriers towards Digital Device Access and Usage

**Table – I: Chi-Square test for association between Age group of the respondents and Barriers towards Digital Device Access and Usage**

Age Group of the Respondents	Barriers towards Digital Device Access and Usage			Total	Chi-Square Value	P Value
	Low Level	Moderate Level	High Level			
21-30 Years	40 (32.0%) [40.0%]	40 (32.0%) [27.6%]	45 (36.0%) [52.9%]	125 (100.0%) [37.9%]	55.585	< 0.001**
31-40 Years	20 (16.0%) [20.0%]	85 (68.0%) [58.6%]	20 (16.0%) [23.5%]	125 (100.0%) [37.9%]		
Above 40 Years	40 (50.0%) [40.0%]	20 (25.0%) [13.8%]	20 (25.0%) [23.5%]	80 (100.0%) [24.2%]		
Total	100 (30.3%) [100.0%]	145 (43.9%) [100.0%]	85 (25.8%) [100.0%]	330 (100.0%) [100.0%]		

Note:

- i. Values within ( ) indicate Row Percent
- ii. Values within [ ] indicate Column Percent
- iii. \*\* indicates significant @ 1% level

From the above table, we reject the null hypothesis H1, since the p value is < 0.001 at 1 percent level of significance. Hence we conclude that there is an association between Age group of the respondents and Barriers towards Digital Device Access and Usage. Based on the row percentage (36.0%) the age group between 21 – 30 Years have the highest level of barrier to use the Digital Device, as they will mostly influenced by their family. Based on the row percentage (68.0%) the age group between 31 – 40 Years have moderate level of barrier to use the Digital Device, whereas based on the row percentage (50.0%) for the age group above 40 years have the lowest level of barrier to use the Digital Device, as they will not be mostly influenced by their family.

*Hypothesis II*

Null Hypothesis: There is no significant difference among mean rank of Job Category of the Respondents with regard to Overall usage of Internet on Digital Device

**Table – II: Kruskal-Wallis Test for significant difference among mean rank of Job Category of the Respondents with regard to Overall usage of Internet on Digital Device**

Factor	Job Category of the Respondents				Chi-Square Value	P Value
	Self Employed	Part Time Salaried	Full Time Salaried	Others		
Usage of Internet on Digital Device	195.50	201.75	132.33	285.78	110.141	< 0.001**

Note: \*\* indicates significant @ 1% level



From the above table, we reject the null hypothesis H2, since the p value is < 0.001 at 1 percent level of significance. Hence we conclude that there is significant difference among mean rank of Job Category of the Respondents with regard to Overall usage of Internet on Digital Device. Based on the mean rank (285.78) ‘Others’ (mostly dependent family members who are not employed) have the highest Usage of Internet on Digital Device.

*Hypothesis III*

**Null Hypothesis:** Usage of Digital Devices (Smart Phone, Laptop, Computer) is equally distributed.

**Table – III: Chi-Square Goodness of Fit test for Usage of Digital Device**

Digital Devices	Frequency	Percent	Chi-Square Value	P Value
Smart Phone	245	74.2	248.636	< 0.001**
Laptop	40	12.1		
Computer	45	13.6		
Total	330	100.0		

Note: \*\* indicates significant @ 1% level

From the above table, we reject the null hypothesis H3, since the p value is < 0.001 at 1 percent level of significance. Hence we conclude that there is a difference in the Usage of Digital Device. Based on the percent (74.2) majority of the respondents use Smart Phones widely than any other Digital Device and Laptop is preferred least.

*Hypothesis IV*

**Null Hypothesis:** There is no significant difference among mean rank of Government Sector and Private Sector with regard to overall impact of Digital Device use

**Table – IV: Mann Whitney U test for significant difference among mean rank of Government Sector and Private Sector with regard to overall impact of Digital Device use**

Factor	Sector of the Respondents' Organization		Z Value	P Value
	Government Sector	Private Sector		
Impact of Digital Device use	112.76	190.11	6.945	< 0.001**

Note: \*\* indicates significant @ 1% level

From the above table, we reject the null hypothesis H4, since the p value is < 0.001 at 1 percent level of significance. Hence we conclude that there is significant difference among mean rank of Government Sector and Private Sector with regard to overall impact of Digital Device use. Based on the mean rank (190.11) respondents working with Private Sector have been greatly influenced by Digital Device usage, because they have to more competitive in the growing business competition.

*Hypothesis V*

**Null Hypothesis:** There is no relationship between Overall Digital Device Usage and Overall Impact of Digital Device

**Table – V: Pearson Correlation Coefficient between Overall Digital Device Usage and Overall Impact of Digital Device**

Factors	Overall Digital Device Usage	Overall Impact of Digital Device
Overall Digital Device Usage	1.000	0.093 (0.091)
Overall Impact of Digital Device		1.000

Note: Value within ( ) indicates p Value

From the above table, we accept the null hypothesis H4, since the p value is > 0.05 at 5 percent level of significance. Hence we conclude that there is no relationship between Overall Digital Device Usage and Overall Impact of Digital Device, which indicates almost 0 percent (0.8 percent) relationship between the factors, since the usage of Digital Devices has not influenced the respondents to a greater extent.

*Hypothesis VI*

**Null Hypothesis:** There is no significant difference among mean rank of Men and Women with regard to overall Digital Device Usage, Usage of Internet on Digital Device, Impact of Digital Device use and Barriers for Digital Device Access and Usage.

**Table No. 6 Mann Whitney U test for significant difference among mean rank of Men and Women with regard to overall Digital Device Usage, Usage of Internet on Digital Device, Impact of Digital Device use and Barriers for Digital Device Access and Usage.**

Factors	Gender of the Respondents		Z Value	P Value
	Men	Women		
Overall Digital Device Usage	145.44	198.40	4.945	< 0.001**
Usage of Internet on Digital Device	135.20	215.20	7.516	< 0.001**
Impact of Digital Device use	179.34	142.80	3.417	0.001**
Barriers for Digital Device Access and Usage	160.56	173.60	1.213	0.225

Note: \*\* indicates significant @ 1% level

From the above table, we reject the null hypothesis H6, since the p value is < 0.010 at 1 percent level of significance with regard to overall Digital Device Usage, Usage of Internet on Digital Device, Impact of Digital Device use. Hence we conclude that there is significant difference among mean rank of Men and Women with regard to overall Digital Device Usage, Usage of Internet on Digital Device, Impact of Digital Device use. Based on the mean rank (198.40 & 215.20) Women use Digital Device and Internet to a greater extent as they would be involved more social networking than Men. Whereas when it comes to impact of Digital Device usage Men (Mean rank – 179.34) have been mostly influenced by Digital Device.

From the above table, we accept the null hypothesis H6, since the p value is 0.225 at 5 percent level of significance with regard to Barriers for Digital Device Access and Usage.



Hence we conclude that there is no significant difference among mean rank of Men and Women with regard to Barriers for Digital Device Access and Usage.

## IX. CONCLUSION

A Van Dijk (2006) wrangle presents a deficit of theoretical description and expansion and that the key terminologies are also indistinct. He clinched those superior explanations of ideas, advocated by approaching which can be operationalized for observational type of research could precede the field of research significantly. The instances that Van Dijk gives are all ideas that is recently passed down in mapping the depth of the digital divide:

- ACCESS: When we speak about the access to the Web, what does it mean? What variables should be involved? E.g. Level of Connectivity or alacrity.

- USE: What is the meaning of use?

Few analysts have tried to extend awareness of these ideas with the aim to consolidate the usage of a theoretical groundwork that tries to map the inequality in the usage of technology. Example, in association to access, work Hassani (2006) argues that the area is an essential factors in casting “online enquiries”, disputing that the place of use subjects in the context of Internet connectivity speed, and the isolation and liberty that various locations allow humans.

While accessing from home is greatly linked with great results such as “enriched lives”, humans whom the access to the Web in various distinctive areas gain the most. This holds to the work by Dutta-Bergman (2005) which proposes that social group admittance to the Web provides to the social investment on pupil in terms of their contentment with societal life.

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