Assessing the Impact of the Digital Divide on Indian Society: A Study of Social Exclusion

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Research in Social Change

ASSESSING THE IMPACT OF THE DIGITAL DIVIDE ON INDIAN SOCIETY: A STUDY OF SOCIAL EXCLUSION

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Abstract

The digital divide is an important issue in developing nations, especially during Covid-19 times. The notion of the digital divide gained prominence in the 1990s. The characterization of the idea of the digital divide has evolved with time and is currently recognized as "lack of knowledge, access or infrastructure." It can be comprehended as a barrier for the general masses, particularly in developing countries. Information and communication technology (ICT) now occupies a significant role in our lives (especially in Covid-19 times). India is known for its social diversity. However, some groups and categories of people have historically been excluded and continue to be excluded today. This study focuses on the assessment of the impact of the digital divide on Indian society, specifically on the phenomenon of social exclusion because of the digitalization of almost all aspects of our lives. The research gap observed is that the digital divide can have serious concerns for future growth since it impedes social mobility, creates impediments, and exacerbates social inaccessibility for disadvantaged groups. To obtain an adequate sample size, respondents are chosen using simple random sampling technique of probability sampling. Statistical techniques such as validity and reliability analysis, T-test, ANOVA, and correlation-regression are used to present quantitative data. The study's expected outcome will be to provide a vigilant roadmap for policymakers and public institutions to strengthen nationhood among the masses while promoting social inclusion. Modern Indian society should strive for inclusion, and there should be no discrimination in terms of digital accessibility, which could paralyze the developing nation.

Keywords

Digital divide • digital discrimination • digital literacy • social exclusion • social inclusion

1. Introduction

The increased usage of the Internet and information and communication technology (ICT) in contemporary times has resulted in a form of social inequality. The social inequality is arising because of the disparities between and among the individuals in terms of digital skills, use of the Internet, and access to digital devices (Zhang 2013). This divide is referred to as "digital divide" which is more visible today, especially in the form of social exclusion in India. This digital divide increases the already-existing disparities among the rural and marginalized populations (Alam and Imran 2015; Bowles 2012). As per the studies done by (Dwivedi, Alsudairi, and Irani 2010) and (Reede 2011), it has been observed that the extensive use of the Internet is often associated with social and economic well-being. It has also been noted that the easy availability of Internet services is related to a nation's growth and development (Bowles and Wilson 2010). There are studies that show that the digital divide might result in exclusion of various forms, such as economic exclusion, social participation, and political exclusion (Barry 2013; Wamuyu 2017).

The idea of social inclusion is one of the goals of the Indian constitution, wherein the masses can completely participate in all aspects (Shortall 2008) of life with dignity. As per most of the studies on the subject matter, the use of ICT paves a new way to address different forms of disparities and inequalities in society and help in poverty alleviation as well (Andrade and Doolin 2016; Gerpott and Ahmadi 2015; Haight, Quanhaase, and Corbett 2014). As an innovative ICT, the mobile platform, which makes digital services available with mobile devices (Hong and Tam 2006; Lee, Shin, and Lee 2009) is thought to offer a great opportunity to narrow the digital divide. The digital platform can connect a number of people and initiate interaction among them (Barrett, Oborn, and Orlikowski 2016; Singaraju et al. 2016), though several research studies have indicated that merely providing access to the digital resources and technology is not adequate to promote social inclusion (Yu, Lin, and Liao 2017). There are several stakeholders that are involved in making any society digitalized, and each of the stakeholders has a crucial role to play in eliminating the digital divide (Venkatesh and Sykes 2013; Chen and Liu 2013). Existing research focuses primarily on the economic impact of ICT in rural areas (Salemink, Strijker, and Bosworth 2017; Okunola, Rowley, and Johnson 2017). Income growth can be aided by investments

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in ICT infrastructure and productivity gains brought about by information technology (Jha, Pinsonneault, and Dubé, 2016). These income gains or any such form of accumulation can be interpreted in the form of social capital in Bourdieu's terminology (Bourdieu 1986). The Internet facilitates social engagement, social involvement, and social participation among heterogeneous and homogeneous sections of society, resulting in greater human capital productivity and efficiency, as well as a more productive society that contributes to the development of social capital. There are some studies that have also noted that the use of the Internet can empower disadvantaged and marginalized populations and enhance their social capital, which can be a potential way to bridge the existing digital divide (Charleson 2012a). Therefore, the Internet is seen as a potential way to proceed toward social inclusion of people who are digitally discriminated against. It has also been argued in various studies that social interaction at the local level can be a source of social inclusion as well as a way of eliminating the digital divide (Alam and Imran 2015).

1.2 Research Problem

Internet usage by the masses largely depends on factors such as the availability of affordable devices, network coverage and connectivity, along with data costs. Today, when India is encouraging the digitalization of services, affordable data availability becomes crucial. However, even after the improvement in availability and accessibility of affordable devices and data, there are certain sections of society who, because of their social and cultural capital, have greater access to resources as compared to others. As per one of the reports published by the OECD (2013), certain demographic factors are associated with lower levels of usage of the Internet, which includes educational levels as well as low income. Today, policymakers endorse Internet usage to reduce the existing digital divide and consider the availability of affordable Internet data as important as safe drinking water, electricity, and a transport infrastructure. Affordable data availability has assumed importance due to its significant role in the communication infrastructure of the country. It is to be noted that the creation of social capital through social networking and Internet access is seen as a prospective means of erasing the digital divide, particularly in rural and remote areas (Charleson 2012; Notley and Foth 2008).

ICT now occupies a substantial role in our lives (especially in Covid-19 times). Digital literacy and successful use of Internet technology have become essential in today's world. India is known for its social diversity, and the concept of social inclusion is enshrined in the Indian constitution. However, some groups and categories of people have historically been excluded and continue to be excluded today. There are varied reasons for such exclusion (caste, gender/transgenderism, tribe, disability). This study focuses on the assessment of the impact of the digital divide on Indian society, specifically on the phenomenon of social exclusion because of the digitalization of almost all aspects of our lives.

1.3 Research Objectives

The research objective of the study is to understand the role of the digital divide and its determinants. The study focuses on the assessment of the impact of the digital divide on Indian society, specifically on the phenomenon of social exclusion because of the digitalization of almost all aspects of our lives. Further, the study intends to investigate some specific aspects and practices of the digital divide as well as the emergence of digital discrimination because of gaps in knowledge, access, and the skill sets required to bridge them. The research questions to be addressed by the study are the substantiation of the digital divide in India as well as the investigation into impediments to digital inclusion, which consequentially reinforces social exclusion in Indian society.

2. Literature Review

The rapidly changing society is one of the contributions of the ICT (Nandi 2002) that has impacted all areas of human life. The concept of "digital divide" became widespread during 1990s and early 2000s, and the definition of the concept has been evolving ever since. The distinction between those having access to technology and those who do not has been a prominent aspect of the digital divide. The related concept of digital exclusion, , which refers to the gap between the populations having Internet access and those who do not, has been researched by various scholars (Mehra 2002). A study done by Azari and Pick (2005) states that the "uneven distribution of the ICT benefits" refers to the digital divide. As the definition of the digital divide evolved with time, it came to be associated with empowerment, mobility, and differentiation as well (Newhagen and Bucy 2004). It is to be noted that since the 1970s, the usage of ICT was unevenly distributed, and most of the population still faces digital exclusion (Selwyn and Facer 2007).

The definition of the digital divide has evolved with time, from depicting the division between users and nonusers to explaining the various gradations of skill divide as well. The recent research on the issue focused more on the skill set and knowledge to understand the concept of digital exclusion and inclusion. Individuals who were digitally skilled could take better advantage of the changing digital society Van Deursen, A., and J. Van Dijk, 2014), and because of its social, economic, and political implications, the digital divide has recently piqued the interest of academics and policymakers alike.

2.1 Global Digital Divide

According to UNESCO, only 55% of global households have access to the Internet. This percentage falls below 20% in the poorest countries. The primary form of the digital divide speaks about the gap based on Internet access. In one of the studies done by (Hargittai 2002), it has been mentioned that the role of skill is important when we speak about the second form of the digital divide. Yet another research study published by Palfrey and Gasser (2008) argues for the importance of digital literacy and not just mere access to ICT. The research conducted by Borislov and Serban (2013) and Pedrozo (2013) are in tandem with this argument for digital literacy. They also argue that the disparity between the experienced Internet users and those who lack digital literacy or are new to the digital world is contributing to the second digital divide. Yet another argument states that the lack of computer use skills, when combined with other sociocultural factors, affects the marginalized differently and consequently further restricts their chances of competing in the globalized labor market (Pedrozo 2013). The third level of the digital divide is related to the existing knowledge gap that persists because of the inequality in Internet usage due to disparity in educational levels of different sections of the population (Van Dijk and Hacker 2003; Wei and Zhang 2006). It is interesting to notice how Toledo (2007) mentions the "internet generation divide," which he describes as a divide between the "digital natives" and "digital immigrants," i.e., between the young population who have grown up in the digitalized world, especially with the Internet, and the older generation, who has only recently become acquainted with the technology.

Nonetheless, in the twenty-first century, the digital divide today signifies the disparity among the population at diverse socioeconomic echelons in terms of the access to ICT as well as the use of Internet for several activities (OECD 2013). Yet another study by Rasanen (2006) refers to the notion of the digital divide as a more critical division along the lines of socioeconomic and developmental aspects. This is in addition to the basic component of inequality in poor countries concerning the deprivation from the necessities of life. These elements create impediments and differences in the access and use of the Internet in the developing nations as well as among the marginalized sections of the developed nations (Alam and Imran 2015; Neumayer, Raffl, and Bichler 2010; Neuman, Biedrzycki, and Baum 2010).

The quantification of the concept of the digital divide through different models has also researched, and it has proved itself as a crucial tool for interpreting the multidimensional nature of the digital divide (Vicente and Lopez 2011a). As per some of the empirical research on the subject, the economic wealth of the nations and individuals become the most influential factor which is at the core of the disparities in ICT usage (Vicente and Lopez 2011b; Waber and Kauffman 2011). It is interesting to note how Chinn and Fairlie (2010) conclude that the largest influential factor that can help in explaining the reason for the digital divide is per capita income. On the other hand, where several scholars believe that gender is also one of the causes of the digital divide, and females' usage of computers is less as compared to that of their male counterparts. In another research study, Billion, Marco, and Lera-Lopez (2009) argued that the tertiary qualifications of the population are significantly related to the implementation of the Internet as well as e-commerce platforms. It has also been noted that the role of demography in terms of social, economic, and educational diversity as well as the size of the population is also important in illustrating the various aspects of the digital divide (Bowles 2012; Atkinson, Black, and Curtis 2008; McLaren and Zappala 2002; Curtin 2001). Yet another factor, age, factor was also noted by Lloyd and Hellwig (2000), and the influence and existence of networks built up by Internet access and usage proves the multifaceted uses of the Internet (Agarwal, Animesh, and Prashad 2005).

2.2 Defining Digital Inclusion

The term "digital inclusion" refers to citizens' universal access to ICT. For significant digital inclusion to take place, universal access and affordability should be the priorities to be handled while dealing with such issues. It is quickly becoming one of our generation's most pressing social justice issues. Digital inclusion is critical for participation in the labor force and educational and economic development, as well as several other aspects of life (Walton et al. 2013). The correlation of having access to digital resources and digital skills with social exclusion is also noted upon. The notion of digital inclusion is not only about access to the technology and Internet sources, but also how access directly and indirectly influences the lives of the marginalized and deprived sections of the society (Alam and Imran 2015a). There have been several studies that have linked social inclusion with digital inclusion. Recent research has found that digital inclusion has significant social and economic benefits for individuals who have a computer at home, which results in better educational opportunities as well.

Digital inclusion speaks predominantly about working for the benefit of the community to address issues related to access, opportunity, and skill sets related to technology. Some scholars have identified various steps of digital inclusion extending from basic usage to advanced participation (Helsper and Reisdorf 2012). Those categories of population who are socially isolated have very limited access to digital resources which can be seen as being reinforced among economically marginalized sections of the society (Helsper 2008). There is research that shows the impact of age, disability, and employment status on the usage of digital devices and Internet services (Helsper and Reisdorf 2016).

2.3 Role of Digital Divide in Reinforcing Social Exclusion

The concept of the digital divide has been widely researched in recent years, and it has sparked much discourse about its economic, social, and political implications. Existing research shows that the divide between those who have access to ICT and those who do not creates exclusion, jeopardizes social integration, and stifles economic growth. The digital divide has many dimensions and can be divided into global, regional, and national divides. One study investigated the social exclusion and inclusion skills of Internet users. The survey questionnaire included questions about the participant's social inclusion capability. These questions focused on the use of the Internet in improving the skills and knowledge, along with improvement in social networks and community participation. A sizable proportion of those polled agreed that the Internet can help people improve their knowledge, skills, and social engagement. As a result, the Internet contributes positively to the region's social inclusion and social capabilities. This means that the Internet has the potential to facilitate social inclusion in the region. The linkages of ICT and social exclusion are very much dependent on this kind of usage. The process of exclusion from a particular kind of usage reinforces social exclusion of other forms as well (Helsper and Reisdorf 2012). As mentioned by Gibbs (2001), the direct measurement of social exclusion is difficult, and the impact of social and economic factors are complicated in nature. Bradshaw, Baldwin, and Rowe (2004) highlight the importance of differentiating between macro drivers that contribute to social exclusion, risk factors that indicate vulnerability to social exclusion, and causes that cause social exclusion. Simply placing digital exclusion within such a structure will aid in eliciting the connection between social and digital exclusion.

3. Theoretical Framework

It is pertinent to mention that the idea of social exclusion first emerged in the 1970s in the works of Lenoir (Hilary 2019). However, one of the facets of social exclusion, i.e., economic discrimination, was studied first by Baker (1965). The later work on the concept of exclusion made new additions such as those categories or groups of people who are denied access to many things in life. In the words of Amartya Sen (2000), "a livelihood, secure, permanent employment, earnings, property, credit or land, housing, consumption levels, education, and cultural capital, the welfare state, citizenship and legal equality, democratic participation, public goods, nation or dominant race, family and sociability, humanity, respect, fulfilment, and understanding" are essential. In contemporary times, especially in the Indian context, even after working towards an inclusive society, there are numerous domains that are still impacted by social exclusion (Buvinic 2005). It is to be noted that Buvinic encapsulates the idea of social exclusion as "the inability of an individual to participate in the basic political, economic, and social functioning of the society," and also mentions "the denial of equal access to opportunities imposed by certain groups of society upon others." The definition given by him aptly captures three main features of social exclusion, i.e., "effects on culturally defined groups;" the role of social relations; and the effects of such exclusion (Haan 1997). The phenomenon of social exclusion has a deep impact on a person's access to opportunities, especially in the context of power relationships. Amartya Sen (2000) has clearly pointed out the benefits and drawbacks of social inclusion and exclusion. He has also used terms such as "unfavorable exclusion" and "unfavorable inclusion." Moreover, in the Indian context, it is important to reiterate here, that only when the social, economic, and political aspects are made inclusive and participative can such a diverse society tread on the path of success and growth. Therefore, same aspect can be correlated in terms of access to digital resources and technology, wherein, certain sections of the society remain excluded from the benefits of digital means and face the impact of the digital divide because of the pre-existing socioeconomic, educational, and political life chances.

4. Methodology

The purpose of this research is to understand the role of digital divide and its determinants. It focuses on the assessment of the impact of the digital divide on Indian society, specifically on the phenomenon of social exclusion. The study was done in 2021 (September-October) through a structured survey questionnaire in the form of Google forms via. emails. The questionnaire gathered the demographic information as well as the perception about digital divide through 13 items (Alam and Salahuddin 2015). The survey was based on 5-point Likert scale with "Strongly Disagree, Disagree, Neutral, Agree and Strongly Agree" as the given options (Singh and Singh, 2020). The sample respondents were selected by means of sample random sampling technique of probability sampling and filtered 412 responses (Cohen 1992) from a total of 481 responses. The sample respondents were from different north Indian states (Uttar Pradesh, Bihar, Rajasthan, Punjab, and Delhi). The respondents were university students since digital skills and impact of digital divide is felt mostly by students during Covid-19 times. The survey responses were anonymous. The responses were analysed through SPSS 25 for reliability and validity along with one sample T-test, one way ANOVA, correlation, and regression analysis.

5. Analysis

5.1 Reliability Statistics

Internal reliability (Table 1) of the 24-construct scale was assessed using Cronbach's alpha technique. The scale produced an alpha of 0.918, suggesting that the items have relatively high internal consistency. The validity of the constructs is justified, as the measures were developed based on an extensive literature review.

5.2 Demography Frequency and Percentage Analysis

The sample indicates a higher percentage of males (65.3%) compared to females (34.8%). A majority of the respondents are between ages 16 and 25 (71.5%). With respect to the occupation of the respondents, a majority are students (76.3%), with 38.8% having a monthly income of above INR 50,000. The sample indicates the respondents belonging to either the general (40.0%) or Other Backward Classes (OBC) (45.5%) category with regard to caste. The breakdown of the study in terms of demographic representation can be observed in Table 2 below.

5.3 One Sample T-test

The one sample T-test gives us a P-value of .000 for the items of both independent variable (Table 3) and dependent variable (Table 4), which is < .05. As a result, we reject the null hypothesis, which asserts there is no difference between our sample mean and the population mean. It means the average of the sample we use is significantly different from the average used in the hypothesis test.

5.4 One-Way ANOVA

The analysis through one-way ANOVA done in the tables below based on gender, age, and education (Table 5) and based on income, occupation, and caste (Table 6) talks about the variance in opinions of the respondents. It is noticeable from the analysis that for all thirteen items, the demographic variables have significant value higher than 0.5, which shows there is a higher variance of opinion.

5.5 Correlation and Regression Analysis

The regression test (Table 7) reveals that there is a 50.3% relationship between these two variables, and the level of significance is .00, which is acceptable as per the study objectives. The effect of the independent variable (digital divide) on the dependent variable (Indian society) is 70.3%.

Table 1. Reliability of the Research Construct

Cronbach's alpha	.918
No. of items	24

Source: Researcher's analysis generated through SPSS 25

6. Discussion and Conclusion

This study delves into the current level of the digital divide in India as well as the factors associated with the extent of Internet use. The findings of this study can be useful for informing policymakers about the key barriers to Internet use, highlighting certain sociodemographic groups that are lagging in Internet adoption, and serving as a guide for investments and strategies to encourage these groups to use the Internet in order to increase their human and social capital. It was also discovered that participants with higher levels of Internet literacy use the Internet more than those with lower levels of Internet literacy. Such findings clearly show that Internet skill or literacy not only influences individuals' Internet use, but it also has a significant effect on the extent of Internet use. As a result, it is possible to conclude that India has a skill divide as well as a digital divide.

Table 2. Frequency and Percentage Analysis

Items	Parameters	Frequency	Percentage
Gender	male	261	65.3
	female	139	34.8
Age	16 years–25 years	286	71.5
	26 years–35 years	91	22.8
	36 years–45 years	17	4.3
	46 years–55 years	6	1.5
Educational background	secondary	1	0.3
	intermediate	69	17.3
	graduate	162	40.5
	postgraduate	152	38.0
	PhD	16	4.0
Income*	Rs. 10,000–Rs. 20,000	115	28.7
	Rs. 21,000–Rs. 30,000	46	11.5
	Rs. 31,000–Rs. 40,000	29	7.2
	Rs. 41,000–Rs. 50,000	55	13.8
	Above Rs. 50,000	155	38.8
Occupation	student	305	76.3
	government employee	23	5.8
	private sector	47	11.8
	other	25	6.3
Caste**	general	160	40.0
	OBC	180	45.5
	SC	32	8.0
	ST	28	7.0
Total		400	100

Source: Researcher's analysis generated through SPSS 25

*1 INR=0.013 USD

**Caste refers to hereditary classes into which people are divided in a Hindu society.

Table 3. One-Sample Test for Independent Variable

	Test value = 5					
	t	df	sig. (2-tailed)	mean difference	95% confidence interval of the difference	
					lower	upper
Item 1	-27.380	399	.000	-1.555	-1.67	-1.44
Item 2	-33.044	399	.000	-1.757	-1.86	-1.65
Item 3	-20.616	399	.000	-.957	-1.05	-.87
Item 4	-21.877	399	.000	-.880	-.96	-.80
Item 5	-21.237	399	.000	-.728	-.79	-.66
Item 6	-23.109	399	.000	-.648	-.70	-.59
Item 7	-25.028	399	.000	-.992	-1.07	-.91
Item 8	-16.199	399	.000	-.540	-.61	-.47

Source: Researcher's analysis generated through SPSS 25

Table 4. One-Sample Test For Dependent Variable

	Test value = 5					
	t	df	sig. (2-tailed)	mean difference	95% confidence interval of the difference	
					lower	upper
Item 1	-25.314	399	.000	-1.240	-1.34	-1.14
Item 2	-26.676	399	.000	-1.223	-1.31	-1.13
Item 3	-25.368	399	.000	-1.000	-1.08	-.92
Item 4	-22.000	399	.000	-.907	-.99	-.83
Item 5	-26.519	399	.000	-.857	-.92	-.79

Source: Researcher's analysis generated through SPSS 25

Table 5. One-Way ANOVA for Gender, Age, & Education

	GENDER		AGE		EDUCATION	
ITEMS	F	Sig.	F	Sig.	F	Sig.
Item 1	.226	.635	26.541	.000	1.539	.190
Item 2	.071	.790	10.835	.000	.653	.625
Item 3	1.816	.179	6.956	.000	.538	.708
Item 4	4.029	.045	2.156	.093	3.395	.010
Item 5	7.846	.005	8.480	.000	1.783	.131
Item 6	.877	.350	5.857	.001	4.544	.001
Item 7	.274	.601	5.349	.001	1.834	.122
Item 8	4.265	.040	21.920	.000	1.337	.255
Item 9	9.435	.002	7.532	.000	3.554	.007
Item 10	3.787	.052	8.477	.000	1.129	.342
Item 11	5.817	.016	3.350	.019	.439	.781
Item 12	10.483	.001	8.954	.000	.514	.726
Item 13	7.927	.005	10.866	.000	1.398	.234

Source: Researcher's analysis generated through SPSS 25

The research plays a vital role in informing the people who are at the decision-making and policymaking level about the various obstacles that exist in the usage of the Internet, thereby focusing on certain sociodemographic groups that are still lagging behind in terms of adopting and using the Internet. The study's main objective was to look into the degree of the digital divide that exists in the form of social exclusion in India, and therefore this study can also play an important role in guiding and implementing policies in such a way so as to encourage the disadvantaged group to become digitally skilled so as to enhance their social and human capital. As per the findings of this study, it is to be noted that

Table 6. One-Way ANOVA for Income, Occupation, and Caste

	INCOME		OCCUPATION		CASTE	
ITEMS	**F**	**Sig.**	**F**	**Sig.**	**F**	**Sig.**
Item 1	5.960	.000	.487	.692	3.479	.016
Item 2	5.059	.001	1.744	.157	8.066	.000
Item 3	2.369	.052	3.969	.008	.486	.692
Item 4	2.002	.093	7.643	.000	8.354	.000
Item 5	1.008	.403	3.304	.020	1.970	.118
Item 6	.860	.488	3.408	.018	2.138	.095
Item 7	1.639	.164	2.883	.036	2.495	.060
Item 8	4.828	.001	5.374	.001	2.085	.102
Item 9	2.387	.051	9.348	.000	2.895	.035
Item 10	.063	.993	13.559	.000	4.849	.003
Item 11	4.279	.002	7.934	.000	5.437	.001
Item 12	5.263	.000	12.666	.000	4.013	.008
Item 13	5.159	.000	14.737	.000	3.727	.012

Source: Researcher's analysis generated through SPSS 25

Table 7. Regression Independent Digital Divide and Dependent Indian Society Coefficients[a]

Model		**Unstandardized coefficients**		**Standardized coefficients**		
		B Std.	**Error**	**Beta**	**t**	**Sig.**
1	(Constant)	1.124	.246		4.578	.000
	Digital_divide	.709	.061	.503	11.596	.000

[a]Dependent Variable: Indian_Society
Source: Researcher's analysis generated through SPSS 25

just reducing the financial and social hindrances towards Internet access would not reduce social inequalities until and unless equal efforts are made towards supporting the population and providing them the necessary digital skills. As a result, it's critical that digital economic policies conceived and developed for sustainable growth should include initiatives to bridge these digital inequalities. Further research in the area will be more effective in addressing India's hurdles to digital inclusion.

References

Agarwal, A., A. Animesh, and K. Prashad. 2005. "Social Interactions and the 'Digital Divide:' Explaining Variations in Internet Use." *Information Systems Research* 20(2): 277–94.

Alam, K., and S. Imran. 2015. "The Digital Divide and Social Inclusion among Refugee Migrants: a Case in Regional Australia." *Information Technology & People* 28(2): 1–14.

Alam, K., and M. Salahuddin. 2015. *Assessing Digital Divide and Its Determinants: A Case Study of Households' Perception in the Western Downs Region of Queensland*. [Toowoomba, Queensland]: Australian Centre for Sustainable Business and Development, University of Southern Queensland, Toowoomba.

Andrade, A. D. B, Doolin, B. 2016. "Information and Communication Technology and the Social Inclusion of Refugees." *MIS Q.* 40: 405–16.

Atkinson, J., R. Black, and A. Curtis. 2008. "Exploring the Digital Divide in an Australian Regional City: A Case Study of Albury." *Australian Geographer* 39(4): 479–93.

Azari, R., and B. J. Pick. 2005. "Technology and Society: Socioeconomic Influences on Technological Sectors for United States Counties." *International Journal of Information Management* 25(1): 25–3.

Barrett, M., E. Oborn, and W. Orlikowski. 2016. "Creating Value in Online Communities: The Sociomaterial Configuring of Strategy, Platform, and Stakeholder Engagement." *Information Systems Research*. 27: 704–23.

Barry, Jack J. 2013. "Crossing the Digital Divide: Is Access to the Internet an Economic Right?"Paper presented at the American Political Science Association Annual Conference, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2315307.

Becker, Gary. 1965. *The Economics of Discrimination*. Chicago: University of Chicago Press.

Billion, M., R. Marco, and F. Lera-Lopez 2009. "Disparity in ICT Adoption: A Multidimensional Approach to Study the Cross-Country Digital Divide." *Telecommunications Policy* 33: 596–610.

Borislov, D., A. Serban. 2013. "The Digital Divide in Romania–A Statistical Analysis." *Economia Seria Management* 15(1): 347–55.

Bourdieu, P. 1986. "The Forms of Capital." In *Handbook of Theory and Research for the Sociology of Education*, edited by J. G. Richardson, 242–58. Westport CT: Greenwood Press.

Bowles, M. 2012. "Digital Economy and Regional Futures." *ICT Future Foresight, Innovation and Business Skills Australia, Melbourne*.

Bowles, M., and Paul Wilson 2010. *The Impact of the Digital Economy and the National Broadband Network on Skills.* Melbourne: Innovation and Business Skills Australia.

Bradshaw, J., S. Baldwin, and A. Rowe. 2004. *The Drivers of Social Exclusion: A Review of the Literature for The Social Exclusion Unit in the Breaking the Cycle Series*. London: Office of the Deputy Prime Minister, https://www.york.ac.uk/inst/spru/research/pdf/drivers.pdf.

Brodbent, R., and T. Papadopoulos. 2013. "Bridging the Digital Divide: An Australian Story." *Behavior and Information Technology* 32(1): 4–13.

Buvinic, Mayra. 2005. "Social Inclusion in Latin America." In *Social Exclusion and Economic Development*, edited by Mayra Buvinic and Jacqueline Mazza, 3–32. Baltimore: Johns Hopkins University Press.

Charleson, D. 2012. "Bridging the Digital Divide: Enhancing Empowerment and Social Capital." *Journal of Social Inclusion* 3(2): 6–19.

Chen, R. S., and I. F. Liu. 2013. "Research on the Effectiveness of Information Technology in Reducing the Rural–Urban Knowledge Divide." *Computers & Education* 63: 437–45.

Chinn, M. D., and R. W. & Fairlie. 2010. 'ICT Use in the Developing World: The Analysis of Differences in Computer and Internet Penetration." *Review of International Economics* 18(1): 153–67.

Cohen, J. 1992. "A Power Primer." *Psychological Bulletin* 112(1): 155–9. https://doi.org/10.1037/0033-2909.112.1.155.

Curtin, J. 2001. "*A Digital Divide in Rural and Regional Australia.* Current issues brief 1. Canberra: Information and Research Services, Department of the Parliament Library.

Dwivedi, Y. K., M. A. Alsudairi, and Z. Irani, Z. 2010. "Explaining Factors Influencing the Consumer Adoption of Broadband." *International Journal of Business Information Systems* 5(4): 393–417.

Gerpott, T. J., and N. Ahmadi. 2015. "Composite Indices for the Evaluation of a Country's Information Technology Development Level: Extensions of the IDI of the ITU." *Technology Forecasting and Social Change.* 98: 174–85.

Gibbs, D. 2001. "Harnessing the Information Society? European Union Policy and Information and Communications Technologies." *European Urban and Regional Studies* 8(1): 110–115.

Haan, De Arjan. 1997. "Poverty and Social Exclusion: A Comparison of Debates on Deprivation." Working Paper, no. 2. Brighton: Poverty Research Unit at Sussex, University of Sussex.

Haight, M., A. Quanhaase, and B. A. Corbett. 2014. "Revisiting the Digital Divide in Canada: The Impact of Demographic Factors on Access to the Internet, Level of Online Activity, and Social Networking Site Usage." *Information Communication and Society* 17: 503–19.

Hargittai, E. 2002. "Second Level Digital Divide: Differences in People's Online Skills." *First Monday* 7(4).

Helsper, Ellen. 2008. "Digital Inclusion: An Analysis of Social Disadvantage and the Information Society." London: Department for Communities and Local Government, http://eprints.lse.ac.uk/id/eprint/26938

Helsper, Ellen J., and Bianca C. Reisdorf. 2012. "A Quantitative Examination of Explanations for Reasons for Internet Nonuse." *Cyberpsychology, Behavior, and Social Networking* 16(2): 94–99.

Helsper, Ellen Johanna, and Bianca C. Reisdorf. 2016. "The Emergence of a 'Digital Underclass" in Great Britain and Sweden: Changing Reasons for Digital Exclusion." *New Media & Society* 19: 1253–70.

Hilary, S. 2019. Social Exclusion. 1-6. 10.1002/9781118568446.eurs0486.

Hong, S. J., and K. Y. Tam. 2006. "Understanding the Adoption of Multipurpose Information Appliances: The Case of Mobile Data Services." *Information Systems Research* 17: 162–79.

Jha, S. K., A. Pinsonneault, and L. Dubé. 2016. "The Evolution of an ICT Platform-Enabled Ecosystem for Poverty Alleviation: The Case of eKutir." *MIS Quarterly* 40: 431–45.

Lee, S. H., B. Shin, and H. G. Lee. 2009 "Understanding Post-Adoption Usage of Mobile Data Services: The Role of Supplier-Side Variables." *Journal of the Association for Information Systems*10: 860–88.

Lloyd, R., and O. Hellwig. 2000. *Barriers to the Take-Up of New Technology*. Discussion Paper 53. Canberra: National Centre for Social and Economic Modelling, University of Canberra.

McLaren, Jennifer, and Gianni Zappala. 2002. "The 'Digital Divide'" among Financially Disadvantaged Families in Australia." *First Monday* 7(11): 43-59.

Mehra, B. 2002. "Bias in Qualitative Research: Voices from an Online Classroom." *The Qualitative Report* 7(1): 1–19, https://doi.org/10.46743/2160-3715/2002.1986

Nandi, B. 2002. "Role of Telecommunications in Developing Countries in the 21st Century." Presented at the 14th Biannual Conference, International Telecommunication Society, Seoul.

Neuman, L. A.,K. Biedrzycki, and F. Baum. 2010. "Digital Technology Access and Use among Socially and Economically Disadvantaged Groups in South Australia." *Journal of Community Informatics* 6(2).

Neumayer, C., C. Raffl, R. M. Bichler. 2010. "Politics and Social Software: Recommendation for Inclusive ICTs." In *Emerging Practices in Cyberculture and Social Networking*, edited D. Riha and A. Maj. Amsterdam: Editions Rodopi, 41-62.

Newhagen, J. N., E. P. Bucy. 2004. *Media Access: Social and Psychological Dimensions of New Technology Use*. Mahwah, NJ: Lawrence Erlbaum.

Notley, T., and M. Foth. 2008. "Extending Australia's Digital Divide Policy: An Examination of the Value of Social Inclusion and Social Capital Policy Frameworks." *Australian Social Policy* 7: 87–110.

Organisation for Economic Co-operation and Development. 2013. *Economic Outlook 2013*. Paris: OECD.

Okunola, O. M., J. Rowley, and F. Johnson. 2017. "The Multi-Dimensional Digital Divide: Perspectives from an E-Government Portal in Nigeria. *Government Information Quarterly* 34: 329–39.

Palfrey, J., and U. Gasser. 2008. *Born Digital: Understanding the First Generation of Digital Natives*. New York: Basic Books.

Pedrozo, R. 2013. "New Media Use in Brazil: Digital Inclusion or Digital Divide?" *Online Journal of Communication and Media Technology* 3(1): 144–62.

Rasanen, P. 2006. “Information Society for All? Structural Characteristics of Internet Use in 15 European Countries.” *European Societies* 8(1): 59–81.

Reede, M. 2011. *The Impact of the Australian National Broadband Network on the Communications Sector: A Forensic View*. Sydney: Allen & Overy.

Salemink, K., D. Strijker, and G. Bosworth. 2017. “Rural Development in the Digital Age: A Systematic Literature Review on Unequal ICT Availability, Adoption, and Use in Rural Areas.” *Journal of Rural Studies* 54: 360–71.

Selwyn, N., and K. Facer. 2007. *Beyond the Digital Divide: Rethinking Digital Inclusion for the 21st Century*. Bristol, UK: Future Lab.

Sen, A. 2000. “Social Exclusion: Concept, Application, and Scrutiny.” Working Paper, Social Development Paper, no. 1., Bangkok: Asian Development Bank.

Shortall, S. 2008. “Are Rural Development Programmes Socially Inclusive? Social Inclusion, Civic Engagement, Participation, and Social Capital: Exploring the Differences.” *Journal of Rural Studies* 24: 450–7.

Singaraju, S. P., A. N. Quan, O. Niininen, and G. Sullivan-Mort. 2016. “Social Media and Value Co-Creation in Multi-Stakeholder Systems: A Resource Integration Approach.” *Industrial Marketing Management* 54: 44–55.

Toledo, C. A. 2007. “Digital Culture: Immigrants and Tourists Responding to the Natives’ Drumbeat.” *International Journal of Teaching and Learning in Higher Education* 19(1): 84–92.

Van Deursen, A., and J. Van Dijk. 2014. “The Digital Divide Shifts to Differences in Usage.” *New Media & Society* 16(3): 507–26.

Van Dijk, J., & K. Hacker. 2003. “The Digital Divide As a Complex and Dynamic Phenomenon.” *The Information Society* 19: 315–26.

Venkatesh, V., and T. A. Sykes. 2013. “Digital Divide Initiative Success in Developing Countries: A Longitudinal Field Study in a Village in India.” *Information System Research.* 24: 239–60.

Vicente, M., A. Lopez. 2011. “Assessing the Regional Digital Divide across the European Union.” *Telecommunication Policy* 35: 220–37.

Waber, D., R. Kauffman. 2011. “What Drives Global ICT Adoption? Analysis and Research Directions.” *Electronic Commerce Research and Applications* 10: 683–701.

Walton, P., T. Kop, D. Spriggs,and B. Fitzgerald. 2013. “A Digital Inclusion: Empowering All Australians.”, *Australian Journal of Telecommunications, and the Digital Economy* 1(1): 9.1–9.17.

Wamuyu, P. K. 2017. “Bridging the Digital Divide among Low-Income Urban Communities: Leveraging Use of Community Technology Centers.” *Telematics and Informatics* 34: 1709–20.

Wei, L., M. Zhang. 2006. “The Third Digital Divide: The Knowledge Gap on the Internet.” *Journalism and Communication* 13(4): 43–53.

Yu, T. K., M. L. Lin, and Y. K. Liao. 2017. “Understanding Factors Iinfluencing Information Communication Technology Adoption Behavior: The Moderators of Information Literacy and Digital Skills.” *Computational Human Behaviour* 71: 196–208.

Zhang, T. 2013. “Income Disparity and Digital Divide: The Internet Consumption Model and Cross-Country Empirical Research.” *Telecommunications Policy* 37: 515–29.