BREAKING THE DIGITAL GENDER DIVIDE:

A Case Study Research of the Role of Cultural Values and Societal Norms in Women's Use of Information and Communication Technologies

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Abstract

The purpose of this study is to examine how cultural values and societal norms shape women's access to, ability to, use of and knowledge of the internet, software, and hardware. To do so, this study makes use of three theoretical frameworks, which each contribute in a different way which creates a more holistic understanding of the digital gender divide. Through a literature review, an understanding of previous research was created, which together with the theories, laid the basis for the methodological selection for this research. The research is based on the multiple-case study method, in which three cases were selected. These cases provide the empirical data that shows the digital gender divide and are used as empirical examples throughout the analysis to highlight how the digital gender divide is a consequence of cultural values and societal norms.

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Chapter 1: Introduction

On June 30, 2022, the Internet World Stats estimated that approximately 32,1% of the world's population will not have access to the internet in 2023 (Internet World Stats, 2022). Of the other 67,9%, the access to the internet and its enabling hardware is highly divergent. Arora (2019) claims that the internet is the collective knowledge of the global population. The above numbers suggest that about one third of the global population are digitally excluded, unable to participate in the digital era in which we now live (IGI Global, 2020). Even more alarming is the amount of female digital exclusion observed worldwide. Alliance for Affordable Internet reports that "*around 234 million fewer women in low- and middle-income countries use the mobile internet than men"* (Alliance for Affordable Internet, 2021, p. 6). The issue of unequal access to connectivity has garnered increasing attention over the past few decades as technology has evolved and become integral in the daily affairs of individuals, businesses, and nations. Simultaneously, the disadvantages of being unconnected have become more pronounced because of the numerous opportunities offered by the internet. The number of opportunities the internet brings, has brought forth a discussion whether it should be a human right (Nex, 2015). In response to the unequal development of access to connectivity, an array of concepts, definitions, and theories have emerged that attempt to explain the causes of the unequal access to digital means and explore ways to increase internet access and get more people connected.

The most prevalent concept is known as 'the digital divide', simply defined as the disparity between those who have access to the internet and those who do not (Henry, 2019, p. 2). However, upon closer examination of the conceptualization of the development observed worldwide, it becomes apparent that the issue is not so straightforward. A more thorough understanding of the impact requires consideration of the various ways in which individuals are disconnected, including geographical and demographic (van Dijk, 2013). One issue that

seems to be prevalent over large parts of the world is the unequal access, knowledge, and usage between men and women. Overall, there are more men using technology compared to women (Petrosyan, 2023), which is known as the digital gender divide. This difference spurred the interest in knowing what impacts such a divide, which is what this thesis will look at. However, to understand this gap between male and female internet usage, access, and knowledge, we first need to assess what the digital divide is.

Taking the simple definition of 'have and have not', digital divides can be found anywhere. It can be applied to not having access to a certain technology, not having access to internet connection at home, or not having access to internet connection at all (Ragnedda & Muschert, 2013, pp. 1-2). An example is how some households possess a multitude of devices per individual, possibly even separate devices for personal and professional usage. On these devices there is often access to high-speed mobile internet such as 5G, providing the people that have such devices with the ability to always remain connected. Additionally, in a lot of countries or areas where mobile phones or laptops are widely available, digital infrastructure is also well built out, with free Wi-Fi available at shopping malls, cafés, and public transportation (GSMA, 2022). Conversely, individuals without easy access to the internet may have to resort to utilizing internet cafes or other similar hubs to gain access. Although it is available, it is only to a limited extent in comparison to the previous example. Lastly, you have areas or circumstances where information and communication technologies are completely inaccessible.

Geographically, the digital divide is often reflected in the disparities in access to technology and supportive infrastructure between developed countries in the Western world and underdeveloped countries in the Global South with limited or no access (Petrosyan, 2023). Despite this common distinction in research, it can also be found between other geographical variables, such as the difference between urban and rural areas within one country (Henry, 2019, p. 2). Demographically, there has been identified a significant difference in the accessibility between different parts of demography, such as age groups, genders, and minority and majority populations. Overall, young people are more tech savvy than elderly people, men have more access to the internet and more digital knowledge than women, and minority populations experience digital exclusion in comparison to majority populations (van Dijk, 2013, pp. 33-34; Wessels, 2013, p. 18).

The below figure shows the latest statistics on internet usage rates, defined by gender and region (Petrosyan, 2023). This gives an indication on where the biggest difference within the digital divide lies. The most notable discrepancies are found between the Global North and the Global South. Africa as a region ranks lowest, as well as experiences the largest differences between male and female internet users. Although regions in the Global North are close to equal usage, there is still a small difference between male and female.

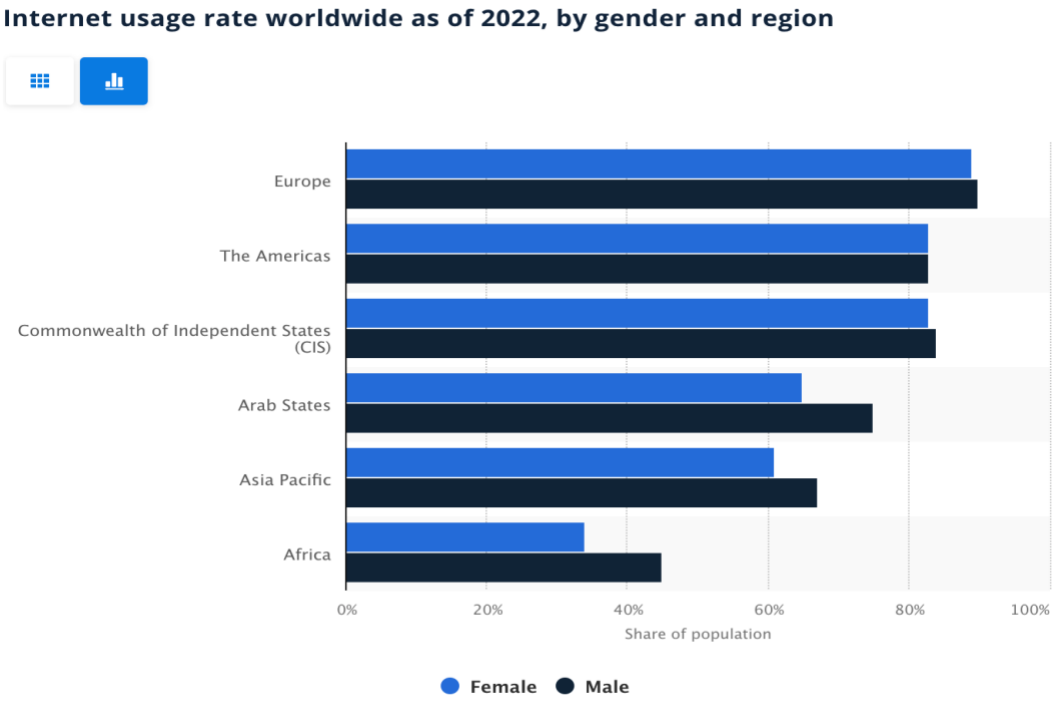

Figure 1.1: Internet usage rate worldwide as of 2022, by gender and region (Petrosyan, 2023).

The observed disparity in technological access and usage between men and women initiates a curiosity about the underlying reasons that shape this gender gap. A potential influencing factor might be the socio-geographical division between the Global North and the Global South, prompting a more nuanced exploration of the topic. Why do countries in the global south seemingly experience a greater difference between male and female in this regard? This demographic distinction could potentially elucidate the discrepancies and contribute to a more specific and focused examination of the gendered digital divide.

This topic was chosen partially because of the relevance it has within the field that I work in, which surrounds itself with providing equitable access to connectivity, often with close consideration of how women can be more included. Fully understanding the importance of digital tools and the internet, and the value it brings to people's lives in terms of opportunities,

capabilities, and resources, can ensure that the organization that I work for take more informed decisions when working towards the mission of the organization.

Based on this knowledge, this thesis will focus on one aspect of the digital divide, namely the difference in gender participation in the digital era, and how societal norms might impact these differences. Before looking into current research on the topic of the digital gender divide, a definition of the digital gender divide, as well as the term gender will be given to clarify the intention of this research.

1.1 Defining the digital gender divide

The digital gender divide cannot be understood exclusively, without looking towards the definition of 'the digital divide' as a whole.

Based on the definition of the digital divide, the digital gender divide refers specifically to the unequal access, representation, and use of information and communication (digital) technologies between men and women (Kraft-Buchman, et al., 2022, pp. 8-9). It is a complex issue which encompasses several different levels. It includes, but is not necessarily limited to access to hardware, digital devices, the internet, digital literacy and knowledge, and participation in the digital economy (OECD, 2018, p. 22). According to the World Wide Web Foundation (2020, p. 7) the definition of the term 'digital gender divide' needs to address the barriers women specifically meet when accessing the internet, which makes it more difficult to benefit from it to its full extent. Such barriers are "*digital skills and education gaps, affordability barriers worsened by income inequality, online harassment and infringement on digital rights*". Furthermore, it is claimed that due to the lack of female representation in the technology sector of the workforce, the internet, software, and hardware is "not designed with women's needs in mind" (World Wide Web Foundation, 2020, p. 7).

The digital gender divide is a global phenomenon. It affects women and girls both in developing and developed countries. However, the difference is especially pronounced in low-income countries. Through research, it has been shown how women in low-income countries are more likely to lack access to digital devices and the internet, as well as the skills needed to navigate the digital world (Petrosyan, 2023).

According to ITU (2022(a)), there are four main categories that are necessary to address when looking at the digital gender divide. ITU has defined them as the following:

1. A gap in the access and use of the internet.
2. A gap in digital skills and use of digital tools.
3. A gap in participation in science, technology, engineering, and math (STEM) fields.
4. A gap in tech sector leadership and entrepreneurship.

In this research, the gaps are important to note as these will lay the basis for which fields to look into when assessing the causes of the digital gender divide.

The term 'gender' distinguishes itself from 'sex' through the societal and cultural implications the word carries with it. Whereas the word 'sex' is used to describe the biological differences between male and female, 'gender' emphasizes the construction of ideas surrounding the sexes. It includes the societal and cultural expectations and traits that are associated with the sexes (WHO, 2023). The World Health Organization defines gender as the following:

"Gender refers to the characteristics of women, men, girls, and boys that are socially constructed. This includes norms, behaviors and roles associated with being a woman, man, girl, or boy, as well as relationships with each other. As a social construct, gender varies from society to society and can change over time" (WHO, 2023).

This definition also points to the ontological understanding of the research that will be conducted. Although the ontological understanding will not be emphasized further in this paper due to space constraints, it is worth noting that the research is based on a constructivist ontology, viewing the world as constituted by ideas and a system of norms. A constructivist ontology holds that structures, regardless of whether they are global, regional, individual, cultural or societal, are created through the subjective perception of individuals (Theys, 2018).

In this thesis, the focus will be on the difference between men and women, and the cultural and societal expectations of women based on their sex. This research, and the understanding of gender will not be considered through the lens of identity politics or gender identity, which emphasizes the personal perception of one's own gender. This decision has been made based on the feasibility of the study as well as the interest of the researcher. There are clear records that show the difference between men and women and the difference in their access to and use

of the internet, which form the background of this research. The amount of data on gender identity and access to information and communication technologies is not widely accessible, probably due to limited research that has been done on this specific topic.

Before moving to the background research, it is also important to understand what is meant when referring to 'cultural values and societal norms.' To address this, Geert Hofstede's definition of national cultural will be used. Hofstede defines culture as the following:

"The collective programming of the mind distinguishes the members of one group or category of people from others" (Hofstede Insights(b), 2023).

The theoretical framework that he has created in which to study cultures through, will not be assessed as a whole, but two dimensions will be relevant to keep in mind when looking at the cultural aspect of the research question, namely the power distance dimension in societies, as well as whether societies are more masculine or more feminine (Hofstede Insights(b), 2023). This will be explained in further detail in the theory chapter.

Since the research also looks at social norms, it is necessary to have an idea of what this term includes. For the purpose of this research, a definition from Denny's and Nwankwo's study will be used, who have combined other authors definition of social norms, and thus created a well-rounded understanding of what this concept includes:

"[…] social norms are defined as behavioral rules to which individuals prefer to conform, conditional on their expectation that 1) most people in their relevant network conform, and 2) most people believe they should conform (Bicchieri 2006). Social norms are held in place by the expectations of positive social sanctions for compliance or negative social sanctions for deviant behaviour (Mackie et al. 2012)." (Denny & Nwankwo, 2015, pp. 19-20).

The definitions of gender, culture, and social norms will lay the foundation in which the remainder of the paper builds on. When mentioning either of the above concepts, they are understood through the way they have been defined.

1.2 Background research

To understand the complexity of the digital gender divide, and to highlight where this research can contribute, it is necessary to look at current research within the field, and its shortcomings. Based on reports and research previously conducted, two main questions have been identified as the most asked and attempted answered.

1.2.1 Why does the digital gender divide exist?

Current research on the digital gender divide largely considers the above question. There are a number of reasons that have been identified as explanatory for the discrepancy between men and women in the digital space. Firstly, as seen in Figure 1, the difference between male and female access to the internet exists in developed countries as well, although on a smaller scale. Researchers have therefore questioned whether the difference between internet access and digital accessibility is determined by biological difference as well as societal and economic reasons (Bimber, 2000; Fallows, 2005; Hilbert, 2011, pp. 3-5). Current research, as illustrated by OECD (2018, pp. 8-10), shows that biological difference can play a role, not due to the sex influencing the interest of the person, but largely due to stereotyping of gender roles in societies worldwide, leading men and women to choose, whether subconsciously or consciously, different directions from an early age. Santosham & Lindsey (2015, p. 15) also claim that societal expectations and (perceived) social support from communities or family influences the access women have to technology.

The majority of research suggests that gender differences in computer use, and interest can be explained by societal and cultural factors, such as gender stereotypes, access to technology, and gendered socialization (Antonio & Tuffley, 2014). Studies that exist within this field often look at where the gap can be found through quantifiable methods that aim at collecting data sets that showcase differences in for example network infrastructure, educational enrollment and school attendance, and mobile phone ownership (Dicke, Safavian, & Eccles, 2019; Gruen, Ibarra, & Ramos, 2018; West, Kraut, & Han Ei, 2019).

In the UN Women's 2022 report about the progress on the sustainable development goals, they point out that due to the lack of female representation and cultural practices, girls are often discouraged from pursuing computer science and other technology-related fields of study and work (Azcona, et al., 2022, p. 5). The lack of female representation has largely been attributed to societal expectations and gender stereotypes. In connection with this, if women do not see other women in positions of leadership or success in technology, it might be difficult to envision oneself in similar roles. Lack of representation can therefore contribute to a culture of isolation and exclusion, which again might discourage women from pursuing careers in technology (Pande, 2006, p. 194).

Addressing these factors are an important step towards creating a more inclusive environment for women in the tech industry, and ultimately to narrow the gender gap. Breaking down gender stereotypes and creating more inclusive environments can help ensure women's participation in the digital era. Similarly, women may face barriers to accessing technology and participating in the digital economy due to systemic discrimination and unequal opportunities, such as limited access to formal education (Dicke, Safavian, & Eccles, 2019).

Another gender stereotype related to technology, is that it is often viewed as a masculine pursuit, and therefore portrays women as less capable or interested in fields that are dominated by men (Bimber, 2000, pp. 3-4). This can lead to girls and young women internalizing these stereotypes, which can lead to feeling less confident or motivated to pursue technology related careers.

1.2.2 Why is the digital gender divide an issue?

To meaningfully address the digital gender divide, it is important to consider why it matters that women are unequally connected in comparison to men. The consequences of the digital gender divide for women are far-reaching. First and foremost, it has significant implications for gender equality and development. The digital revolution has disproportionately magnified the inequalities between men and women, which makes it one of the most prominent disparities in gender inequality (Antonio & Tuffley, 2014). It is a fact that there are persisting gender inequalities in a lot, if not most societies around the world. Women having unequal access to the digital world will likely reinforce these inequalities, which leads to a consistent cycle of exclusion and marginalization (Azcona, et al., 2022, pp. 4-5).

Women who lack access to digital technologies may be excluded from critical information and services, such as healthcare and banking (Gruen, Ibarra, & Ramos, 2018, p. 34). Additionally, having digital access and knowledge increases social and economic mobility. Women who don't have access to these will lack opportunities, particularly when entering the labor market. Many jobs increasingly require digital skills (Alliance for Affordable Internet, 2021, pp. 15-16). Addressing the digital gender divide is thus essential for achieving overall gender equality, as well as empowering women and girls to fully participate not only in the digital world, but in the digital age and society overall. As discussed previously, social and cultural factors seem to be one of the main reasons why women experience digital exclusion.

Addressing the digital gender divide therefore requires addressing social and cultural factors that contribute to gender disparities in technology.

There is a widespread agreement that the overall digital divide that has arisen must be bridged. The multifaceted nature of the divide complicates potential solutions, both through governmental policies and organizations dedicated to this endeavor. The global digital divide finds itself across a multitude of different 'lines' or intersections. One of those, which is getting increasingly more attention, is the gender line. Overall, in 2022 globally, 57% of all women use the internet, compared to 62% of men. Furthermore, according to numbers from ITU in 2020, only 19% of women in Least Developed Countries (LDCs) used the internet, compared to 86% in developed countries (ITU(b), 2022).

To address such issues, the United Nations defined the Sustainable Development Goals (SDGs), which are global ideal goals that countries should strive to achieve by 2030, to create a more sustainable future for all beings (United Nations, 2023). Several of the goals target specifically the digital divide, focusing on increasing access to information and communication technologies for all (9.C), as well as encouraging international cooperation on and access to science, technology, and innovation (17.6). Notably, one of the targets addresses the inequality between men and women in accessing the digital sphere.

Target 5.B reads as follows: *"Enhance the use of enabling technology, in particular information and communications technology, to promote the empowerment of women"* (United Nations, 2023). To achieve the overall goal of universal access to information and communication technologies, the digital gender divide must be addressed. This particular target aims to address the digital gender divide and ensure that women and girls have equal access to technology and its benefits. The target seeks to promote women's empowerment through the use of technology, including the Internet and mobile phones, to enhance women's access to information and communication, increase their participation in decision-making, and support their economic and social development. However, to fully address the situation, the underlying factors that impact this divide need to be identified and addressed. From there, meaningful policy recommendations can be made and implemented.

A lot of current research addresses the issues of the digital gender divide and present suggestions on how to mitigate it. In OECD's assessment on the digital gender divide they

mentioned several policy recommendations that aim to strengthen women's participation in and knowledge of the digital sphere (OECD, 2018, pp. 114-117). Among other things, they state the following recommendations:

1. Enhance access to and improve affordability of digital technologies through infrastructure investment and decreasing costs on broadband subscriptions.
2. Boost skills through education, digital skills training program, campaigns aimed at awareness creation around women's abilities and opportunities within STEM and ICT-related work.
3. Facilitate labor market participation and learning during work by offering flexible schedules, making it easier to combine family and work-life.
4. Support female entrepreneurship by encouraging mixed men-women teams of researchers and investors.

Sterling, Grubbs, & Koutsky (2020, p. 6) argue that although the most common factors contributing to the digital gender divide are considered to be "*cost, skills, relevance, time, poverty, and safety/privacy concerns*", these factors are all rooted in cultural values and socials norms. Moreover, they claim that the above attributes are often easier to assess through research, which is why they are measured to the extent that they are in the literature on this topic. In their view, to meaningfully address the digital gender divide it is essential to look at how societal norms impact women's online presence. They illustrate their argument with the following statement:

"[…] whether women have even basic literacy education, whether women feel safe using the internet, whether women have time or confidence to learn a new skill – are merely outcomes of deep-seeded gender and power inequities in their communities" (Sterling, Grubbs, & Koutsky, 2020, p. 6).

The United Nations designated the theme for International Women's Day 2023 as "Digit-ALL: Innovation and technology for gender equality" (UN Women, 2022). By directing their campaign towards the exclusion of women from the digital realm, the UN has drawn attention to the persistent issue of the digital gender gap, raising awareness on an international scale. In their elaboration of the theme, they highlight the primary challenges faced by women who have access to the internet, including being underrepresented in the creation, use, and regulation of technology, less likely to utilize digital services or pursue tech-related careers, and more likely to encounter online harassment and violence (UN Women, 2023).

Concurrently, the UN underscores some of the consequences of the digital gender divide, pointing out that women's digital exclusion has caused low- and middle-income countries to lose around $1 trillion over the past decade (UN Women, 2023). Moreover, the G20 summit held in Bali in 2022 also recognized the need for international cooperation to facilitate equal access to digital connectivity and digital skills and literacy (G20 Leaders' Declaration, 2022).

1.3 Research question

After having assessed previous research on the topic of the digital gender divide, it is clear that current research on the topic has focused on the following issues. Firstly, since the start of the digital age and expansion of technologies, there has been a lot of research on what the causes of the overall digital divide are, which we have identified above. Following this there has been a lot of emphasis on policy recommendations, assessments, and research on how communities, NGOs, countries, and the international plethora of institutions can address the digital divide, and through this find meaningful and sustainable solutions to bridge this divide.

While it is known that a digital gender divide exists, there has not been a lot of research done looking into the potential causes of the digital gender divide. There also remains a gap in the literature that examines the significance of bridging the digital gender divide, specifically in relation to its potential impact on national and international economies, poverty alleviation, educational attainment, and overall development (van Dijk, 2017, p. 8). There are few predictions or estimates on what impact the digital exclusion of women. To meaningfully address this, it is important to create a deep understanding of what potentially can cause such a divide between men and women. Only then will it be possible to provide policy recommendations that address and target this issue.

Therefore, to create awareness and action on this topic, it is important to ensure that governments, civil society organizations, and individuals know why it is important that this issue should be addressed. It is easy to understand that governments do not wish to pump money into initiatives that might not have a lot of benefits. Extensive and reliable research that shows the importance of this issue is therefore necessary.

In this research, the aim is to answer the following research questions:

How do cultural values and societal norms shape the digital gender divide in India, Uganda, and Nigeria?

The following chapters will elaborate on the methodological and theoretical choices for this study. The method used to examine the research question allows for a deeper understanding of the reasons why the digital gender divide is on the international agenda. The theoretical choices have been made based on their ability to shed light on the digital gender divide through the divide, gender, and international perspectives. By combining these theories, the research question is elicited from a multitude of perspectives that together create an understanding of how to address the research question. The theoretical concepts will be explained in Chapter 3 and will subsequently be applied to the empirical data in Chapter 4.

Chapter 2: Methodology

In the following chapter, the method used in this research will be presented together with the reflections on the methodological considerations. Firstly, a brief introduction of the research design will be presented before the choice of theories will be outlined. Thereafter, a description of the method will be given before the selection of cases is presented. After that, an overview of each case and reflections on why specifically these have been chosen in this research will be presented. Lastly, the limitations of the research caused by the choice of theories, the method, and cases will be discussed.

2.1 Choice of theories

The study requires different theories due to it being research that covers both international relations such the gender divide being on the United Nations agenda, which elevates the issue to the international stage. Simultaneously, the underlying reasons for the existence of the digital gender divide can often be found in social and behavioral aspects, and it is therefore important to look at it through theoretical perspectives that are more related to social and behavioral sciences. The advantage this creates is that it allows us to shed light on the different sides of the issue, which can create a more holistic view. In this thesis, three theories have been chosen to supplement each other in identifying the underlying reasons for the existence of the digital divide, as well as look at how they can explain the benefits of closing it.

2.1.1 Constructivist theory

Constructivist theory, or constructivism, claims that everything we surround ourselves with is socially constructed. The way individuals, societies, and countries cooperate is all based on constructed ideas and beliefs on how reality should look. This means that if the wish and will is there to make changes, it is possible, because it has all been constructed by humans. This grand theory has been selected for its understanding of how the world operates. When looking at cultural and normative aspects of the research question, and whether this can affect women's digital access and knowledge, there is an underlying idea that social constructions within societies are central to the digital gender gap. Thus, if cultures, values, and norms would be changed, so would women's access to digital tools, digital knowledge, and the internet (Debrix, 2003; Duryea, 2022; Pouliout, 2004; Theys, 2018).

2.1.2 Digital Divide theory

The digital divide theory by Jan van Dijk is a step-by-step assessment of how a digital divide can develop. These steps highlight not only why it can occur, but simultaneously show how it can be overcome. Following the framework's visual representation, every individual needs to climb 'to the top of the staircase' with every new technology or software that is introduced in order to close the digital gap. Not all ICT's will have the same effect on the global, overarching scale, considering both software and hardware tools are developed for specific purposes. The framework, however, presents a visual understanding of what actions need to be taken (van Dijk, 2002; 2013; 2017).

This theory has been selected for its ability to look at what potential causes of the digital divide can be. Although it does not pay particular attention to the differences between men and women, it can still provide an overview of which stage women find themselves, and thus which barriers they need to overcome to narrow the digital gap. It will be used in conjunction with other theories to investigate how the digital divide translates into the digital gender divide.

2.1.3 Hofstede's framework of cultural dimension

Hofstede's theory of cultural dimension was developed to better be able to understand and analyze different cultures through different aspects of cultures. Through this framework, one can compare and contrast countries with each other. In this research, the theory will be used to understand how the various cases are situated in relation to two of the dimensions in the

framework, namely the power dimension and the masculine versus feminine dimension. These two dimensions can be assessed to situate and understand the cultural values and societal norms in each of the cases, which provides ground for further research on how these values and norms impact the digital gender divide in the countries that have been selected. (Hofstede Insights(a) & (b), 2023).

2.2 Choice of method

In the following sections the choice of research design, method, and the theories that have been utilized throughout this study will be presented. The methods will be outlined and the reasoning behind these choices will be explained.

2.2.1 Research design

Based on GSMA's quantitative research on the digital divide, they found that *"Women are less likely than men to own a mobile phone, use mobile internet or own a smartphone, even when other relevant socioeconomic and demographic factors are controlled for."* (Butler & Shanahan, 2020). They point out that although all variables have been controlled for in the study they conducted, overall, women are less likely to make use of and own mobile phones in comparison to men. They argue that this might be due to the other aspects that influence women's use of technology such as social norms (Butler & Shanahan, 2020). Because social norms and cultural values are difficult to measure quantitatively, this study will make use of a qualitative research design. Using a qualitative research design allows for a deeper investigation of a topic and is therefore beneficial when looking at norms and values shaping individual actions and societal beliefs (Grønmo, 2016, pp. 22-24).

2.2.2 Literature overview

Prior to starting this research, a literature overview was conducted to find background information on already existing research. The purpose of the literature review is to use the current knowledge on the topic to form the research question. This way of utilizing literature review as a method is named 'narrative literature review', which according to Machi and McEvoy (2022, p. 3) is valuable when you want to draw conclusions about knowledge on a specific topic. The background knowledge was presented in the previous chapter. The literature review was conducted to get an overview of the topic and understand where the current limitations and shortcomings lie. Through the literature review it was not only

possible to gain an understanding of what is relevant within this space, but it also creates an understanding of where further research needs to be taken (Grønmo, 2016, pp. 83-85). The digital gender divide not only affects the women that have less access to the digital world, but it also affects their surroundings, communities, children, and countries. Researching the cultural and normative causes to the digital gender divide can point to both the consequences of the digital gender divide, as well as point to potential solutions to decrease the gap.

The literature review was used to collect the current relevant ideas and progress surrounding this topic. It was used to collect various forms of communication and resources, such as news articles, research articles, journals, social media posts and government reports, to identify the potential causes for the digital gender divide as well as the reasons why it is crucial to close it. The various forms of sources collected created the initial base of data (Grønmo, 2016, pp. 83-85). Through a literature review, it is possible to identify the main factors that contribute to the digital gender divide, such as why there is an unequal access to technology and digital skills, social and cultural barriers to equal access, and economic and political consequences of the digital exclusion of women.

Additionally, it has the possibility to identify data that provides insights into the benefits of closing the digital gender divide. By systematically organizing the chosen data, it is possible to gain a more comprehensive understanding of the complex factors that contribute to the digital gender divide, as well as highlight strategies for closing it (Grønmo, 2016, pp. 83-85).

Prior to the data collection, the focus point of the purpose of the data was highlighted. This meant that the theme of the research had to be clearly defined to enable a more detailed and correct search. A preliminary research question was formulated, which guided the data collection. Grønmo (2016, p. 176) explains that the research question is the main point of focus throughout the entire research and should be referred to and kept in mind when choosing which themes and what kind of content should be included. Using qualitative content analysis as our research design allows for a lot of flexibility, meaning that having a solid research question is important to stay on track. When collecting the data, two processes happened simultaneously. A run-through of the data, as well as considering which data is actually relevant for the purpose of the study is important to make sure that the collected data is fruitful for the analysis of the research question (Machi & McEvoy, 2022, pp. 75-76).

The impact of cultural values and societal norms in relation to women's access to and use of technology is a field in which few researchers have studied. It is a time-consuming topic which often requires a researcher to be at the location of study physically. It is also a topic in which a lot might change over a few years, due to the constant evolvement of both societies and technology. Although these factors might contribute to the fact that this is an understudied topic, it remains an important topic to consider, because the discrepancies between male and female and their respective access and use of technology is happening as we speak, which has consequences beyond the digital arena.

2.2.3 Case study research

Based on the literature review, a research question was formulated, which led to the choice of case study as the research method for this research. To understand how cultural values and societal norms can impact women's access to the internet and digital tools the multiple-case study method was selected.

Using a case study as the primary research method allows for an in-depth examination and analysis of a particular individual, group, society, or country to understand their characteristics, behavior, and experiences. Furthermore, the unique strength of case studies in general is that they have the ability to contribute to knowledge on various levels, such as individuals, groups, societal, or on a higher political level (Grønmo, 2019, p. 105). The method aims to provide a detailed analysis of the subject, and uses multiple data sources, such as documents, articles, interviews, and observations (Yin, 2003, p. 8). Additionally, using case studies as a research method is valuable when doing an empirical investigation of a contemporary phenomenon. As seen in the background research, the digital gender gap is widening in some areas, which is why it is important to understand what impacts such developments.

In this study, several countries were selected to analyze in relation to the research question, and each country is seen as an individual case, making this research a multiple-case study. A multiple-case study is a research design that involves studying more than one case to observe a certain phenomenon (Yin, 2018, p. 90). In this study, the units of analysis are three different countries. The selection of cases will be discussed in the next sub-chapter. The data used in this research has been selected for its ability to answer the research question.

Multiple-case studies are often used in qualitative research to gain a deep understanding of a phenomenon and to explore variations and similarities across the different cases. By studying multiple cases, it is possible to increase the external validity of the findings in the research, as well as identify factors that are either unique to each case, or more generalizable across the selected cases (Yin, 2018, p. 91). Overall, multiple-case studies have the ability to provide a nuanced approach to exploring complex phenomena that can be challenging to capture through using single-case study as the research method.

In this research, the integration of women into digital technology in a few different countries will be explored to see what potential cultural and normative barriers could be as well as the consequences of either exclusion or inclusion. Several countries have been selected to provide a more holistic understanding of the phenomenon (Yin, 2018, p. 35). Multiple-case studies are often regarded as stronger than single-case studies, which is why several different units of analysis have been chosen (Yin, 2003, p. 19). The specific cases have been selected for their ability to highlight cultural aspects of societies that potentially more often leads to the exclusion of women in the tech industry. The different countries used as part of this case study have been selected as empirical data to precisely illustrate this as well as to highlight the consequences of digital exclusion.

The benefits of using case study as a research method are manyfold. Since case studies can be qualitatively oriented, it is a powerful method to use in this study due to its ability to explore and understand unique characteristics of each culture, or society in depth, and can therefore use the empirical data to identify way sin which values and norms are transmitted, reinforced, and perhaps even transformed (Yin, 2018, pp. 24, 35). Using case study in this research will provide us with a tool that allows us to firstly examine the cultural practices and institutions that shape values and norms within a particular society. Examples of such institutions can be religion or family.

Secondly, case studies provide an opportunity to identify cultural variation and explore cultural diversity, laying the basis for a discussion on how this influences women’s access to the internet. Lastly, which is relevant to the purpose of this study, is that this method allows us to examine the impact cultural values and societal norms have on behavior (Yin, 2018, p. 35). In relation to the digital gender divide, different societal values and norms might influence women’s use of digital tools and the internet, which is one of the key reasons why

choosing case study as the research method for this thesis was selected. Moreover, using case study as the method in research that looks at cultural values and societal norms in relation to the digital gender divide is useful for several reasons. It provides a tool to investigate the digital gender divide with the respects to specific social, cultural, and economic contexts in different countries, as well as identify which cultural values shape such norms through analyzing the data.

Before moving on to the explanation on the selection of cases, an important note needs to be addressed in this multiple-case design. As mentioned earlier, a multiple-case study allows us to draw lines and comparisons between the different cases, for example by looking at cultural variation and cultural diversity. The aim of this study and the chosen method is not to facilitate a comparative analysis of the selected cases. This means that the cases will not be compared against each other but will rather act as empirical examples to showcase how culture and norms influences women's ability to get digital access and knowledge. The downsides to using this method will be discussed in the sub-chapter on 'Limitations of the research method'.

2.3 Choice of cases

The digital gender divide can be explained through several different theories, which is why the research question will be considered and analyzed through the different theoretical perspectives presented above. As mentioned in the introduction, the United Nations has included the issue of the digital gender divide in its Sustainable Development Goals, encouraging all countries to consider the issue, as well as setting the tone for what the international standard should be (United Nations, 2023).

Though proper international cooperation has not yet taken place, it is evident that the digital gender divide is an issue that can be found more or less globally. It is therefore relevant to look at several different countries, to see whether there are certain cultural and normative structures or practices that create bigger gender gaps than others. The digital gender divide can be found in most parts of the world. As Figure 1 illustrates, the different regions in the world experience different levels of the digital gender gap, and some areas are significantly more impacted than others.

The cultural and normative aspect of the research question requires a deeper understanding of societal expectations, values and norms. In this research, secondary sources are the main source of data. News articles, research, and reports by others have been analyzed to understand the current development in each selected case.

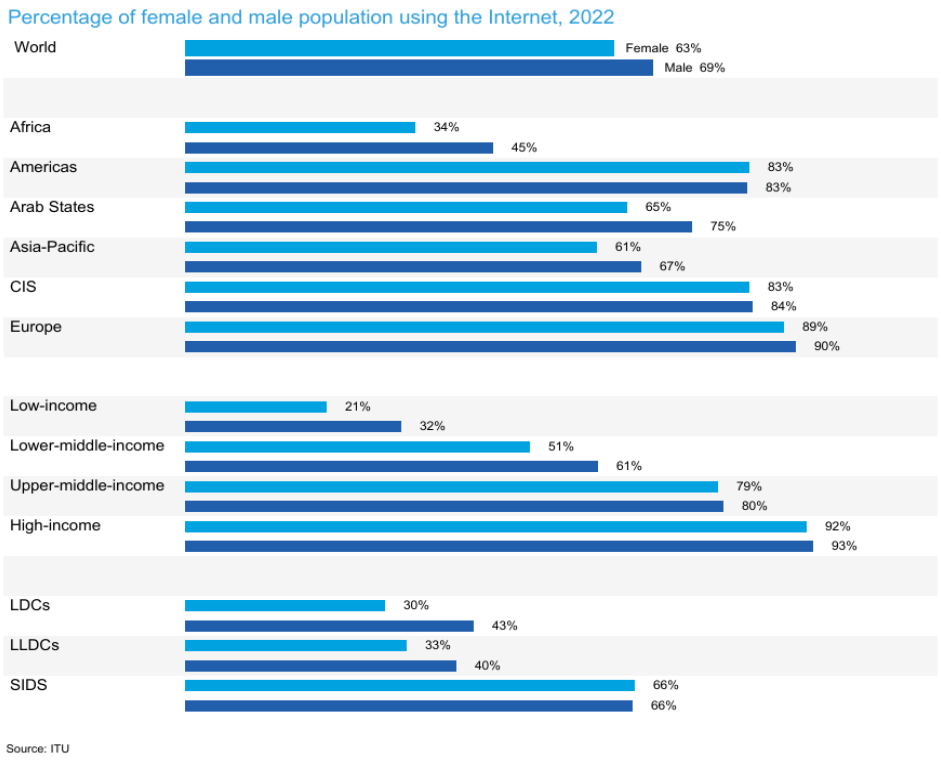

Figure 2.1: (ITU(c), 2022). Percentage of female and male population using the Internet in 2022.

Looking at the above figure, it shows that 69% of the world male population uses the internet, compared to 63% of the female global population. According to ITU, this results in 259 million more men using the internet in comparison to women (ITU(c), 2022). Based on this figure, it is clear that the digital gender gap is most prevalent in Least Developed Countries. When looking at the regional metrics, African and Arab states seem to experience the widest gaps between the genders. Due to the lack of proficient data from countries that are in the least developed countries category, the cases were chosen based on region. While taking this into account, the choice of cases was also based on another consideration.

I, the researcher, work for an organization whose mission is to facilitate equitable access to connectivity. This organization financially contributes to projects around the world where

access to or knowledge of the internet, computers and/or other hardware and software is limited. Through these projects, it becomes evident that women are often at a disadvantage to men. Among other places, India is one of the countries where this is widespread, which is why this country was chosen as a case to illustrate how culture and norms have an impact on digital access for women.

The selection of cases has been partially based on Figure 2, as well as on personal interest that can increase the knowledge and thus benefit the organization where I work to make more informed decisions in the future. The countries that will be used as illustrative cases in this paper are India, Uganda, and Nigeria.

In the below sections, each case will be briefly introduced, and the challenge with the digital gender divide within each country will be highlighted. Additionally, it is necessary to look at the relation between men and women in each of these societies to understand whether there might be cultural or normative factors that can influence women's abilities to access ICT's.

2.3.1 India

India is not identified as being part of the most affected countries by the digital gender gap based on Figure 1.1 and 2.1, however, according to Oxfam India's report on the digital divide in India, India is the country that contribute the largest gap between men and women when it comes to accessing ICT's, due to its large population (Oxfam India, 2022, p. 21). This is significant, considering technology and particularly software skills are important contributors to India's economy (Khurana, 2023). Although internet towers and thus internet access is widely available, there is still a big gap between male and female users (ITU(a), 2023). Despite Indian governmental efforts to close the digital challenges India faces through their 'Digital India' initiative, in which one of the aims is to ensure that every citizen has access to the internet, there are still significant challenges that need to be addressed related to the digital gender divide.

Looking at the relations between men and women in Indian societies, the traditional Indian family and its gender relations are often described as "patriarchal," (Every culture(a), 2023). Within all branches of Hinduism, only males can be priests, although they may be boys. It is customary for a woman in India to first obey her father, then her husband, and finally her son throughout her life. The male head of household's opinion is particularly significant in

arranging marriages, which are typically seen as a union between two families. In such situations, personal preferences receive little consideration. As the male head of the family often controls the family's finances, he is the one who pays or receives a dowry during a child's marriage. Despite the potential for older women to hold significant behind-the-scenes influence, they possess little legal authority concerning property and marriage matters.

2.3.2 Uganda

Whereas a lot of countries generally observe a gradual narrowing of the overall digital divide, Uganda has experienced a further increase in its digital gap, meaning that the country overall is lagging in terms of digital development compared to other countries worldwide (Kentenyingi, 2022). Although mobile broadband networks are extensively built, covering 75% of the population, only around 23% make use of it. According to Kentenyingi (2022), this usage gap disproportionately affects women, as well as other disadvantaged groups in the country. The paper "Bridging the Digital Gender Gap in Uganda" by Women of Uganda Network (APC; Women of Uganda Network, 2020) highlights the digital gender gap in Uganda and the challenges that women face in accessing and using digital technologies. The study found that women in Uganda have limited access to digital technologies due to social and economic factors such as poverty, low levels of education, and cultural beliefs that prioritize men's education over women's education.

In traditional Ugandan societies, women have significant economic and social responsibilities, yet their roles remain subservient to men. Societal norms dictate how women and men should act, and women are most often required to conform to the desires of men, including their fathers, brothers, husbands, and other males. Additionally, women should display their inferiority in public settings (Every culture(b), 2023).

2.3.3 Nigeria

Nigeria was chosen as a case as there it has observed a negative development within digital inclusion of women over the past years. In CITADs report on ‘Overcoming Gender-based Digital Exclusion in Northern Nigeria’, they address this issue by attempting to highlight reasons for women being less connected than men (CITAD, 2016). Although network coverage was as high as 93% in 2021, only 8% of households had ICT access at home, meaning that most people accessing the internet is likely outside of their home (ITU(c), 2023).

Gender-based division of labor is a prevailing feature of Nigerian society. Women are often excluded from political and professional spheres, and their participation in the urban workforce is lower than that of men. Women who do secure professional employment rarely ascend to senior management positions (Every culture(c), 2023).

Nigeria is a patriarchal society where men hold dominant positions over women in almost all areas (Onmuwah, et al., 2019, p. 14042). Although Nigeria has ratified the Convention on Equality for Women, legal rights for women remain limited. Men are permitted to physically harm their wives under Nigeria's Penal Code, as long as they do not cause permanent injury. Wives are often viewed as property and subject to the authority of their husbands (Every culture(c), 2023).

However, women can exert influence in certain areas of society. For instance, in many ethnic groups, mothers and sisters possess significant sway over their sons and brothers, respectively. The familial relationship grants these women a degree of flexibility and influence that is typically denied to wives (Every culture(c), 2023).

2.4 Limitations of the research method

In the following paragraphs, the limitations of the research will be scrutinized. The time frame of this research, the method, and the chosen cases are all individual factors that will cause limitations to the research, and it is therefore important to consider how these choices might influence the outcome of the research.

Due to the time constraints of this research, there are several limitations to the research method that weaken both the validity and reliability of the study. A literature review is essential for starting out the research, making sure there is a clear understanding of what already exists. However, when conducting qualitative research, the data that has been utilized is only based on the researcher's ability to look at the topic and knowing where to look and what to look for (Grønmo, 2016, p. 249). It can therefore be challenging to create a sufficient or complete understanding of all the knowledge that already exists on the topic. The background knowledge is also based on already existing research, which can be limited by the quality and quantity of the available data. The research that exists might be incomplete or biased, and the results drawn from it can therefore be inaccurate and complete. To counter this

as much as possible, paying close attention and critically choosing which data to use and where to find it is important.

Although a case study overall is a comprehensive research strategy, it does have limitations. Firstly, the findings of the research are challenging to generalize to other contexts and populations due to the limited scope of research. It does not mean that the research is not valuable in itself, but it might not give a limited view of the topic, and therefore not provide a comprehensive understanding of the phenomenon under investigation. The findings can be problematic to transfer from one case to another, even though they may seem similar. Drawing conclusions from this research might therefore be insufficient when looking at similar issues in different countries, which limits its value in what it adds to the field. That thought, however, has been challenged by Flyvbjerg (2006, pp. 224-228), who claims that case studies, regardless of whether they are single-case or multiple-case, can still provide valuable explanations to the topic of research. By looking at a topic through a case study method, those case studies can provide insights that can later be looked at through quantitative research.

Secondly, there is limited opportunity to judge the subjectivity or objectivity of the researcher, which can affect the interpretation of the data in qualitative research. Throughout the entire process, and especially since there is only one researcher collecting the data, a selection of which data is seen as relevant, as well as searching for the relevant data is reviewed by the same person. The choices that have been made throughout the data collection are based on a subjective perception of what is relevant. Although the researcher is determined to look at the topic as objectively as possible, it is difficult to ensure complete neutrality (Grønmo, 2016, pp. 251, 254-255).

This is linked to another limitation to this specific research, which is the choice of data. One of the strengths of case studies is that they rely on multiple forms of data or evidence, and a triangulation of data is therefore highly advised (Yin, 2003, p. 12). In this research, different forms of data were collected, but they were all in document form, such as news articles, reports, previous research, and journal articles. To strengthen the validity of the research, it would have been beneficial to rely on multiple data sources, such as interviews or observations.

Lastly, selection of cases as well as interpretation of data might be biased, which can lead to unreliable results in order to prove a point. The chosen cases might not be representative of the digital gender divide worldwide and can therefore give a wrong impression. The cases were also chosen based on where there is available data, which again might give a skewed view of overall challenge with the digital gender divide, considering a lot of areas do not have available data on this specific issue. Despite the limitations outlined above, both the choice of qualitative research design as well as the choice of multiple-case study as method remain valuable, especially when applied appropriately, because they allow for a deeper understanding of the research problem and can also highlight potential solutions.

Chapter 3: Theory

To conceptualize the digital gender divide, several theories can be used both to understand why it has appeared as well as how it is currently being dealt with. In the previous chapter, three theories were introduced: Constructivism, The digital divide theory, and Hofstede's theory of the '6 cultural dimension'. All three theories can be used in research designs with a more qualitative approach. In this chapter, the theories will be outlined in more detail. Their relevance to the research question will also be discussed before moving on to the analysis.

3.1 Constructivism

The main theory that will be applied to the cases to analyze how social norms and cultural values impact women's access to and use of information and communication technologies is constructivism.

Constructivist theory in international relations is a theoretical framework that seeks to explain how ideas, norms, and social practices shape the behavior of individual, national, and international actors. It views the international system as a social construction that is created and sustained by interactions of its members, rather than by a fixed objective reality (Adler, 2013, pp. 112-114). According to constructivist theory, the norms and values a population holds has a significant impact on their actions and the outcome of national and international interactions. Social norms are regarded as unwritten rules and expectations that guide behavior in social interactions (Ayukawa, 2020, p. 2). Social norms, as well as cultural values, are not static, predetermined, or fixed. Rather they are constantly evolving due to social

interaction with other people and cultures, and therefore experience consistent influence from outside factors that help shape ideas.

Furthermore, such social norms play an important role in shaping both state behavior at a macro-level (Pouliout, 2004, p. 321), as well as providing guidelines for what is considered to be accepted group or individual behavior on a micro-level. People's understanding of what is normal is shaped by peoples understanding of themselves, their relationship with others, and their surroundings.

Duryea (2022) claims that constructivism, rather than being a grand theory such as realism or liberalism, it is more of a critical theory because it considers the social, historical, and ideological structures within a society or on a grander scale, which ultimately forms the mindset of this entity. Although constructivist theory within international relations is often used to explain how states operate on a global level, it can also be used to consider how domestic politics are shaped. Being able to apply the theory on a domestic level is a useful attribute in this study.

At the heart of constructivist theory is the idea that the identities and interests of nations, and thus also its people, are socially constructed, rather than fixed or natural (Theys, 2018, p. 36). People are active participants in the creation and maintenance of societies, rather than passive actors responding to objective forces, and thus are the primary drivers of norms and cultural values. Constructivism holds that norms and values can change over time, and that such changes can lead to shifts in behavior of states, which further translates to changes in the international system.

The constructivist framework is valuable to use in this research due to its focus on cultural values and norms, which are difficult to learn about through quantitative studies. Understanding the norms and cultural values often require more time consuming and intensive deep dives into the subjects that are being studied, for example through different forms of interviews or as in this research, case studies. Therefore, using constructivism as a theory that uses a qualitative research framework is fitting.

When using constructivism as a theoretical framework, it is important to consider the various forms in which norms can be constructed. Due to space constraints, there will not be an

analysis of how the norms in different cases have developed in relation to the digital gender divide. It is, however, important to consider various ways which can impact, reinforce, or narrow the digital gender divide in these societies. Through a constructivist lens, the creation of norms at a national, societal, or individual level happens through repetitive and constant social interaction (Theys, 2018, p. 37). Such interactions take many forms, including formal institutions such as government, laws, religious institutions, and education, as well as informal social structures such as family, peer groups, and media.

Norms and values related to gender are shaped through a complex array of social interactions and structures, including cultural traditions, religious beliefs, family dynamics, media representations, and political and legal institutions. Over time, these interactions eventually turn into common structures, which people use as guidelines to understand and interact with the people around them. The structures in turn create and reinforce a set of expectations about what is considered appropriate behavior for men and women (Debrix, 2003, p. 9).

At the individual level, norms and cultural values are reinforced through ongoing socialization processes, in which the existing norms, values, and beliefs within a society slowly are internalized. Furthermore, important parts of these processes happen through language, overall speech, and family values, especially at an early age. In terms of language and speech, the words we use shape the way we think about certain topics (Debrix, 2003, p. 8). In the case of this study, the use of 'gendered language' can reinforce traditional gender roles and norms, which Onuf, In Debrix (2003, p. 12) would describe through his concept that '[s]peaking is an activity with normative consequences'. The way we speak about something, for example the tone we use, can also have an impact on how we perceive a certain topic. If technology is constantly referred to as something masculine, and women are repetitively described as 'not interested' in technology, constructivist thinkers claim that such phrasing will have an impact on the overall sentiment regarding women and technology. Lastly, values and beliefs we learn from our families can also shape the norms we follow. Families that place strong emphasis on traditional gender roles may reinforce these values in their children, shaping the way they think about gender and their own role in society.

3.1.1 Constructivism and the digital gender divide

For the purpose of this study, the constructivist framework needs to be applied to an individual level rather than a state level, which according to Theys (2018, pp. 36-37) sets

constructivist theory apart from other theories within international relations. By applying this theory to the individual level by looking at how different 'actors' in society operate, it is possible to use this theory to explain how specific norms and cultural aspects of certain societies are constructed and maintained. According to constructivism, individuals play an active role in the construction of social reality, and their perceptions and interpretations of the world around them are shaped by cultural and social norms (Theys, 2018, pp. 36-37). An example, which will be highlighted in further details in the empirical analysis of this paper, is how constructivist theory can be used to explain how individuals within a society come to adopt certain cultural practices and norms. Such practices are likely to be transmitted through socialization processes, such as family upbringing, education, and societal expectations. Through these processes, individuals internalize cultural values and beliefs, and come to view them as natural or inherent aspects of their identity.

Constructivism provides a useful framework for understanding how cultural and societal values contribute to the digital gender divide, which will be illustrated through the cases in the next chapter. According to constructivist theory, gender stereotypes, and the various roles associated with each gender within different societies are socially constructed realities that are shaped by cultural beliefs and are preserved through societal expectations. As mentioned previously, an example is that technology is often associated with masculinity and technical expertise, while women are seen as less capable or interested in technical fields (Bimber, 2000, pp. 3-4).

Furthermore, constructivist theory suggests that cultural and societal values can change over time, and that interventions aimed at altering these can help to reduce the digital gender divide (Theys, 2018, pp. 37, 41). Ultimately, constructivist theory emphasizes the importance of understanding the social and cultural context in which the digital gender divide operates and highlights the potential for social change to address this persistent problem.

While constructivist theory can offer valuable insights into the role of cultural values and societal norms in shaping the digital gender divide, there are some potential drawbacks to using this approach. Firstly, constructivism tends to focus on ideational factors and social constructions, which can be difficult to quantify and measure (Palan, 2000, pp. 576-580), hence the qualitative research design of this study. This can lead to criticism of the theory's scientific accuracy. Furthermore, constructivist explanations often emphasize the complex

interplay of social, cultural, and ideational factors in shaping outcomes, yet the interpretation of these outcomes are based on subjective observations, which can lead to biased understandings of the research subject (Hopf, 1998). It may therefore make it more difficult to establish objective criteria for evaluating the validity of the theory.

In this specific research, the constructivist framework might lead to an overemphasis on norms and cultural values, and thus underestimate other factors that might influence the digital gender divide, such as economic resources, infrastructure, and political power dynamics. This could lead to an incomplete understanding of what impact the digital gender divide. Additionally, because this research looks mainly at how societal norms shapes the digital gender divide, individual agency might be neglected. In this case, individual behavior such as resistance to or acceptance of dominant norms and structures is ignored.

3.2 The digital divide theory

The digital divide theory by Jan van Dijk provides a comprehensive framework for understanding the causes and solutions of unequal access to technology. He explains in detail how the digital divide occurs, and why it is an ever-recurring issue that people must overcome with every new technology that is introduced. According to van Dijk, the digital divide is a result of a combination of individual, group, and systemic factors, including differences in income, education, and digital literacy (van Dijk, 2013, p. 30).

An interesting and important observation in Van Dijk's theory is that he emphasizes that the digital divide does not only distinguish between people with and without access to the internet or the necessary technology. Rather, the digital divide can occur in several different capacities, on a scale of accessibility. Even though some people might have access to the internet, it does not necessarily mean that it is easily available. Access is therefore not equal to having the digital knowledge to operate it or being fully included in the digital society (van Dijk, 2013, p. 31).

Van Dijk developed the framework of 'Four successive kinds of access in the appropriation of digital technology'. The framework is shaped like a staircase, illustrating the different, consecutive steps every single person needs to take with every new technology introduced to ensure digital inclusion, and avoid a digital divide developing. This framework can be used to assess where each case is currently standing when it comes to the digital gender divide.

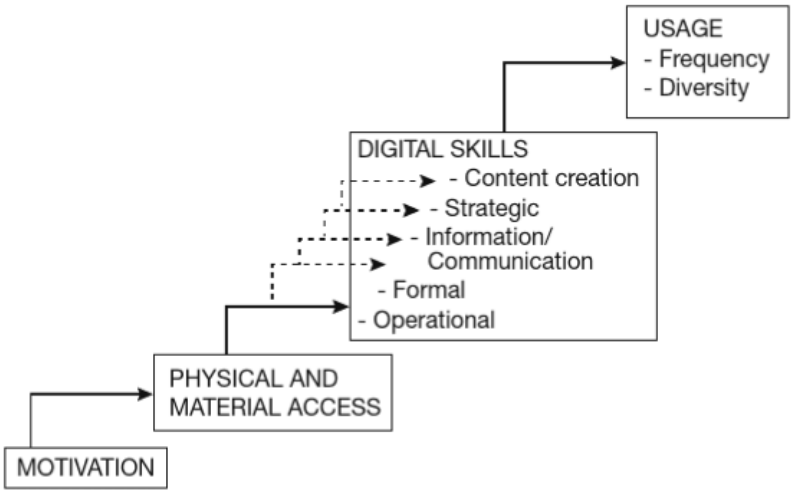

Figure 3.1: Van Dijk (2013, p. 34): *"Four successive kinds of access in the appropriation of digital technology"*

3.2.1 Motivation

The framework explains how and why a digital divide would emerge with any given technology and shows the steps necessary to close it. Firstly, with every new technology, van Dijk claims that there needs to be personal motivation or interest to take on or seek new technology. Motivation can also be understood as mental access, meaning that one needs a rudimentary understanding of and experience with digital tools. This applies to both hardware and software. It goes without saying that not every hardware or software will create a digital divide, but not having the motivation or interest can oftentimes be the first hurdle to accessing digital tools (van Dijk, 2017, p. 5). Although this is the first, and thus an important step towards closing any digital gap, this step is rarely considered to be an issue in the empirical data that was collected in this research. The emphasis on the digital gender divide in each country will thus be on the three following steps.

3.2.2 Physical and material access

Thereafter comes the physical and material access. Whereas the motivation can be described as mental access, being able to physically access the digital world is the next step that can both cause and help solve the digital divide. If one does not have physical access to the necessary materials, it will create a big obstacle for further availability, such as the necessary skill set needed to operate the hardware and software. Van Dijk notices that much of the initial research on the digital divide was focused on physical access (Van Dijk, 2017, pp. 4-5).

When ICTs slowly became commonly used for personal and professional use, physical access was regarded as the biggest obstacle, largely due to its price and availability. Additionally, network connection was only effectively available in larger, wealthier cities.

As networks have become largely distributed due to its growing importance in today's digital age, as well as mass production of computers and smartphones have made them more accessible to many people, the physical access gap is no longer the major point of concern. That does not mean that the physical access gap has been fully closed, however, it might no longer be the main obstacle to tackle the digital divide (van Dijk, 2017, pp. 5-7).

Having physical and material access to technologies, such as mobile phones is considered important for a multitude of reasons, summarized by GSMA in the following sentences: "*Mobile phones give individuals access to multiple forms of communication, such as voice, text, mobile internet and entertainment, the ability to access information such as news and media, as well as life-enhancing, value-added services and mobile money. Higher-end feature phones and smart phones can also allow individuals to have their voices heard through social media such as Twitter and Facebook*." (GSMA, 2016, p. 26).

3.2.3 Digital skills

Simultaneous with the increasing accessibility of ICTs, there was a switch in the research approach to the digital divide. Whereas most of the early research was focused on physical access, the later research has evolved around digital capabilities, knowledge, and skills. According to van Dijk's framework, digital skills are paramount to being able to close the digital gap and can perhaps be classified as the biggest hurdle to overcome today (van Dijk, p. 7). Examples of digital skills are centered around knowing how one should operate both the hardware and the software. Being able to search for information, using software to create content, communication, as well as troubleshooting and solving problems with the hardware. Despite being an important obstacle to overcome in closing the digital divide, it is difficult to effectively measure digital skills. It can be time consuming and resource intensive. Additionally, van Dijk (2017, p. 7) points out that digital skills oftentimes are acquired through experience, rather than taking courses, which makes it difficult to determine as most surveys are based on how individuals view their own skills. The question that should be asked here is whether people can use the internet and digital hardware.

The realization of the shift from physical access to digital knowledge caused digital divide research to be termed in two different categories: the first and the second-level digital divide (Hargittai, 2002). The second-level digital divide addresses the differences between people with and without digital knowledge and abilities, as well as how people choose to use the different technologies. This is what van Dijk addresses with the last step in his framework, namely the usage gap.

3.2.4 Usage

The last step, usage, refers to the time and frequency of use of the internet or digital medium (van Dijk, 2017, p. 8). It also refers to how people choose to use the internet and the devices, for example which websites they go to. Van Dijk explains that the usage gap refers to how technology is used in all areas of life (van Dijk, 2017, p. 8). According to statistical analysis of the usage gap compared to the physical access gap, is there a significant difference between the two (GSMA , 2022). Although a lot of the world today is covered by broadband or mobile networks, and thus often have fulfilled the requirements of physical and material access, there is a significant number of people that experience challenges when faced with these technologies. GSMA (2022) has estimated that this number equals around 40% of the world population who are covered by network services. Similarly to the digital skills gap, we can pose a question to the usage. Rather than asking whether people *can* use it, when assessing the last step, we need to ask whether they *will* use it.

3.2.5 Digital divide theory and the digital gender gap

Circling back to the digital gender divide, the factors mentioned above, such as differences in income, education, and digital literacy interact to create a gender gap in technology access and use, with women being at a disadvantage compared to men. Taking van Dijk's steps of the digital divide framework into account, he highlights that the gender gap in physical access has more or less been closed in the global North (van Dijk, 2017, pp. 5-6). This claim can be verified by the current statistics on internet usage rates based on gender and region, as Figure 2.1 shows.

Van Dijk's theory will be used as a descriptive theory to locate where the different cases in this study can be placed when it comes to the digital gender divide. His model provides a starting point when assessing what digital divides exist between men and women, which is important since it can indicate different cultural values.

To address the digital gender divide from van Dijk's perspective, it is important to understand the interplay between individual, group, and systemic factors, and to take a multi-faceted approach that addresses each of these factors. This could include initiatives such as increasing access to technology and digital literacy training for women, addressing gender stereotypes and cultural norms, and promoting policies and programs that support gender equality in technology access and use. The observation in the statistics of the difference between the global north and the global south is interesting regarding the research question of this study. It provides data that can fuel further research regarding the potential positive consequences of closing the digital gender gap.

The downsides to using this theory in this research is that it does not have the ability to explain neither the gender component, nor the cultural values and societal normative aspects of the digital divide. This means that the theory cannot be used to analyze and answer the research question. Rather it provides a framework for understanding what to look for when assessing the various digital divides between the genders can be when finding statistics. Despite not being a good framework to analyze the specific components (gender, cultural values, and societal norms) in the research question of this study. The framework is used to analyze where the digital divides can be found between men and women, which is important to know in order to meaningfully address them. The societal norms that impact women's physical and material access, and the norms that can impact their skills or usage can be quite different. To understand where the current gap finds itself in the different cases is therefore imperative, which is where this theoretical framework comes in.

3.3 Hofstede's theory of cultural dimensions

Hofstede's theory of cultural dimensions is a framework developed by Dutch social psychologist Geert Hofstede to help understand how cultural differences affect people's behavior and attitudes (Sent & Kroese, 2022). Hofstede's theory is based on the idea that different cultures have different values and beliefs that shape the way people think and act. Hofstede identified six cultural dimensions that can be used to compare and contrast different cultures: Power distance, uncertainty avoidance, individualism versus collectivism, masculinity versus femininity, long- versus short-term orientation, and indulgence versus restraint (Hofstede Insights(b), 2023).

Hofstede's theory has been widely used in cross-cultural research and has helped to explain differences in behavior and attitudes across different cultures. However, it is important to note that cultural values and societal norms are not fixed and can evolve over time, and that individuals within a culture may not always conform to their culture's norms and values. The theory was developed with organizational structures in mind, guiding managers in navigating various cultural values in an organizational environment (Jackson, 2020). This, however, does not imply that it should not be used exclusively for this purpose. When looking at how cultural values shape certain behaviors or beliefs within countries or regions, the framework can provide a valuable starting point.

In this research, only the power distance dimension and the masculine versus feminine dimension will be considered, as these are the dimensions that relate the most to what this research is studying. Focusing on these two dimensions allows us to examine cultural values relating to hierarchical relationships and gender roles, which can greatly influence the digital gender divide. While power distance elucidates acceptance of unequal power distribution, the masculinity-femininity dimension can indicate societal gender norms, which may affect women’s engagement with digital technologies. The two dimensions will be outlined in further detail below.

The power distance refers to the degree to which people in a culture accept and expect unequal distribution of power and authority (Hofstede Insights(b), 2023). In cultures with high power distance, there is a greater acceptance of hierarchy and social inequality, and people tend to defer to those in positions of authority without questioning their decisions. In these cultures, there is a belief that some people are inherently superior to others and that social hierarchies are natural and necessary (Ghemawat & Reiche, 2011, p. 3). Examples of high-power distance cultures include many Asian and Latin American countries (Hofstede, 2023). In contrast, in cultures with low power distance, there is a greater emphasis on equality and fairness, and people tend to question authority and challenge decisions that they disagree with. In these cultures, there is a belief that everyone should have equal opportunities and that social hierarchies should be minimized or eliminated (Ghemawat & Reiche, 2011, p. 3). Examples of low power distance cultures include many Western European and Scandinavian countries (Hofstede, 2023).

The level of power distance in a culture can have important implications for communication, decision-making, and leadership styles. In high power distance cultures, leaders are expected to be authoritative and decisive, and communication tends to be top-down, with subordinates deferring to those in positions of authority. In low power distance cultures, leaders tend to be more collaborative and consultative, and communication is more horizontal and participatory (Tuleja, 2022, p. 117). It is important to note that power distance is a complex dimension that can vary within a culture, depending on factors such as age, gender, and socioeconomic status. For example, in some high-power distance cultures, younger people may have less respect for authority than older people, and women may be more deferential to men than to other women. Therefore, it is important to consider these nuances when applying the power distance dimension to different cultural contexts.

The masculinity versus femininity dimension refers to the degree to which a culture values stereotypically masculine traits such as assertiveness, competition, and achievement, versus stereotypically feminine traits such as cooperation, caring, and quality of life. In cultures with high masculinity, there is a greater emphasis on assertiveness, competition, and achievement. Men are expected to be tough, assertive, and ambitious, and success is measured in terms of material wealth and status. In these cultures, work and career are often seen as the most important aspects of life, and there is little tolerance for failure or weakness. Examples of high masculinity cultures include Japan, Germany, and the United States (Ghemawat & Reiche, 2011, pp. 3-4). In cultures with high femininity, there is a greater emphasis on cooperation, caring, and quality of life. People in these cultures value nurturing, supportive relationships, and prioritize work-life balance over career success. Success is measured in terms of personal happiness and fulfillment, rather than material wealth and status. Examples of high femininity cultures include the Nordic countries, the Netherlands, and Canada (Tuleja, 2022, p. 128).

Importantly, the masculinity versus femininity dimension is not the same as gender roles or gender equality. A culture can be high in masculinity but still have relatively high levels of gender equality, and vice versa. Similarly, a culture may be high in femininity, but women may still face significant barriers to career advancement and other forms of social and economic opportunity. Overall, the masculinity-femininity dimension helps to highlight the different values and priorities that shape the behavior and values of people in different cultures.

3.3.1 Hofstede's theory of cultural dimensions and the digital gender divide

The power distance dimension can be used to analyze gender inequalities (Glick, 2005), and thus the extent to which women in these countries have access to digital technology and are able to use it effectively. In countries with higher scores on the power distance dimension, gender power dynamics unfavorable to women might be more likely to occur (Hofstede Insights(a), 2023). Women's lack of access to resources, opportunities, and decision-making power translates into the digital sphere, which leads to limited representation of women in technology-related fields (Gruen, Ibarra, & Ramos, 2018, p. 13). The hierarchical structure associated with higher power distance scores can potentially lead to limited agency or voice for women, making it difficult to advocate for their rights and needs in the digital sphere. This applies domestically as well as in the overall society.

Furthermore, the respect for power imbalances and unequal access to resources can contribute to digital exclusion for marginalized groups of women, including, but not limited to, those from disadvantaged socioeconomic backgrounds or rural areas. In high power distance cultures, women may have less or limited access to technology due to social and cultural barriers. Whether this is actually the case, we will consider through the empirical data. Lastly, higher power distance can affect access to education and resources necessary for developing digital skills. Women in such societies my face greater barriers in obtaining quality education and training opportunities in the field of technology. Limited access to technology, internet connectivity, digital knowledge, and digital infrastructure has the potential to further marginalize women, which exacerbates the digital gender divide.

The masculinity-femininity dimension can be used to explore how gender norms and expectations influence women's access to and use of digital technology. In societies with higher scores on this dimension, there is typically a stronger emphasis on traditional gender roles and expectations (Hofstede Insights(b), 2023). Women may therefore face greater challenges in accessing digital technology due to gendered stereotypes that prioritize male interests and values. Gender stereotypes can shape perceptions of women's abilities and interest in the field of technology, which again might lead to less women and girls pursuing careers or education within technology-related fields. Moreover, an emphasis on traditional gender roles can result in unequal division of labor within and outside the household, where women typically have domestic responsibilities. Limited encouragement or access to education within the field of technology can in turn deter women's participation and

engagement with digital technologies due to lower levels of digital literacy and knowledge (Gruen, Ibarra, & Ramos, 2018, p. 113).

In Hofstede's country comparison tool, Uganda cannot be found, which is a rather significant limitation to this research, as this is the framework that will be used to understand the cultural values in each country. Lacking the ability to measure one of the cases through the dimensions in his framework, makes it difficult to analyze the cases on an equal basis. Despite this drawback, Uganda is still included in this study. This has been made possible by a study focusing on Ugandan students, and their perception of the Ugandan society (Rarick, et al., 2013). This study aims to place Uganda within the framework of Hofstede's cultural dimension, which is the data that will be used in the analysis.

Furthermore, both Ghemawat & Reiche (2011) and Jackson (2020) note that there are several limitations to using this framework. Jackson (2020, p. 4) emphasizes the limited number values that the study is based on, and that is continuously used to assess countries' cultural values. Ghemawat & Reiche (2011, p. 4) also point to this, highlighting that the scores that each country gets are based on research done several decades ago and might therefore not reflect the current cultural values and societal norms within the societies assessed. It is thus important not to take the framework at face value but consider the findings of the empirical data when analyzing each case.

Chapter 4: Analysis

To answer the research question, the theories will be applied to each case, with the expectation that it elicits the various cultural values and societal norms that shape the digital gender divide, and thus women's access to and use of technology.

Each theory will be applied to each respective case, first analyzing where the digital gender divide can be found within each case, thereafter, discussing which cultural values and societal norms are prevalent in each case. Lastly, we shall look at how such cultural values and societal norms have an impact on the digital gender divide. The analysis is thus divided into three main parts. The first part uses the van Dijk Digital Divide theory to situate the digital gender divide in each case. In the second part, an attempt to understand the cultural values and societal norms in each country is made by applying Hofstede's framework using the two

selected dimensions in each case. Lastly, constructivism will be used to understand how cultural values and societal norms shape the digital gender divide in each case. By using the cases, it is possible to get an idea of how cultures and societal values influence how the digital gender gap has been formed in these specific countries. Before the concluding remarks are presented, recommendations for further research will be outlined as well as a note on the benefits of the digital inclusion of women.

4.1 Where are the selected cases situated in van Dijk's digital divide framework?

To understand which challenges the different countries that have been selected as cases in this research are facing in relation to the digital gender divide, this research will make use of van Dijks Digital Divide framework. As explained previously when outlining each theory, the frame allows us to understand which steps need to be taken in order to close the digital divide. In the following paragraphs, references to figure 3.1 will be made. The framework will be used in a descriptive way to find out where the digital gender divide takes place in each country.

Looking at each of the countries, the first step is difficult to assess through this research. In order to understand whether the populations in general, and the female population particularly, in these specific countries have the motivation to learn a new technology requires its own research, making use of more qualitative research methods to understand what affects the motivation, such as interviews. The three next steps are easier to assess since they can be recorded through statistics. Such statistics are produced yearly, which allows us to place each country's digital development in relation to female inclusion.

As a brief introduction to the following paragraphs, the below figure is presented to show how the countries are situated when it comes to internet usage. The graph, although based on data from 2020 and not up to date with the latest numbers, illustrates how the internet penetration differs in the various countries (The World Bank, 2023). Although India by far has the highest number of individuals using the internet, we shall see that this country surprisingly experiences the biggest gap between male and female users. It would be reasonable to believe that since India has such an extended digital infrastructure, the number of women that use the internet should be higher than what the data suggests.

We will first place each country within van Dijk's Digital Divide framework, paying special attention to the overall connected population, which can indicate the physical and material access, and the difference between men and women's digital literacy levels. Lastly, the latest statistics of each country's social media usage will be highlighted. Although these numbers might not be fully representative of the internet usage of men and women within these countries, social media is one of the most used attributes of the internet overall (Oberlo, 2023). It can therefore give an indication on the difference between male and female usage gap.

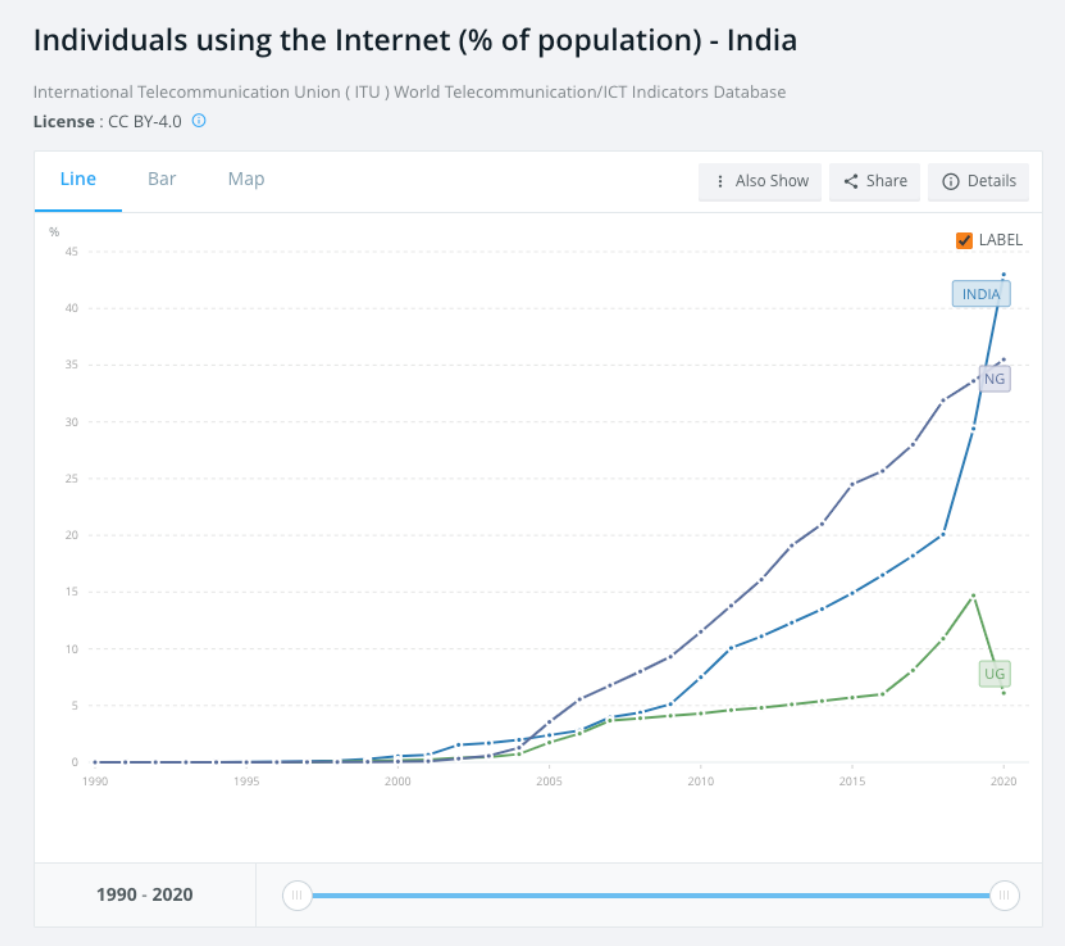

Figure 4.1 Individuals using the Internet: India, Nigeria, and Uganda (The World Bank, 2023).

4.1.1 India

Looking at India, physical and material access are covered to a great degree. Network towers, and thus internet connection, has been rolled out over most parts of the country, covering 99% of the country in both rural and urban areas (ITU(a), 2023). Moreover, a significant part of India's economy is based within the IT-sector. An example is the fact that one of the most significant export markets in India is software services (Economic Times, 2023). It would

therefore be reasonable to assume that there is a strong incentive to grow within this industry, providing this knowledge to as many people as possible. Although the digital infrastructure is extensively built in India, the country still accounts for the biggest digital gender gap within a country worldwide (Oxfam India, 2022, p. 21).

Antonio & Tuffley (2014) explain that whereas only half the women in India can read or write, this is in stark contrast to men, who in 2014 had a 75% literacy rate. The limited low literacy levels among women is a disadvantage when adopting digital technologies. (West, Kraut, & Han Ei (2019, p. 19) found that even when women owned mobile phones, they had only limited knowledge on how to use them, largely due to their lack of literacy or numeracy. Without the fundamental knowledge on how to read or write, learning to navigate the internet and the enabling technologies will remain out of reach for many. This leads to a digital skills gap between men and women.

This discrepancy further suggests a gap in the usage, where it is reasonable to believe that women use the internet and digital tools less and more inconsistently. Based on Dataportal's latest numbers, it is evident that men make use of more social media in comparison to women. Whereas only 26,5% of India's social media users were female, the number for male users was as much as 73,5% in January this year (Kemp, Digital 2023: India, 2023).

In the figure below, the difference in male and female digital literacy levels can be observed. In all areas that are included to assess the digital literacy levels of the respondents, it is noticeable that women score less than men (Asrar, 2023). This suggests that of the women that do have access to the internet and other digital tools, there is a gap between men and women when it comes to knowledge on how to navigate and use it.

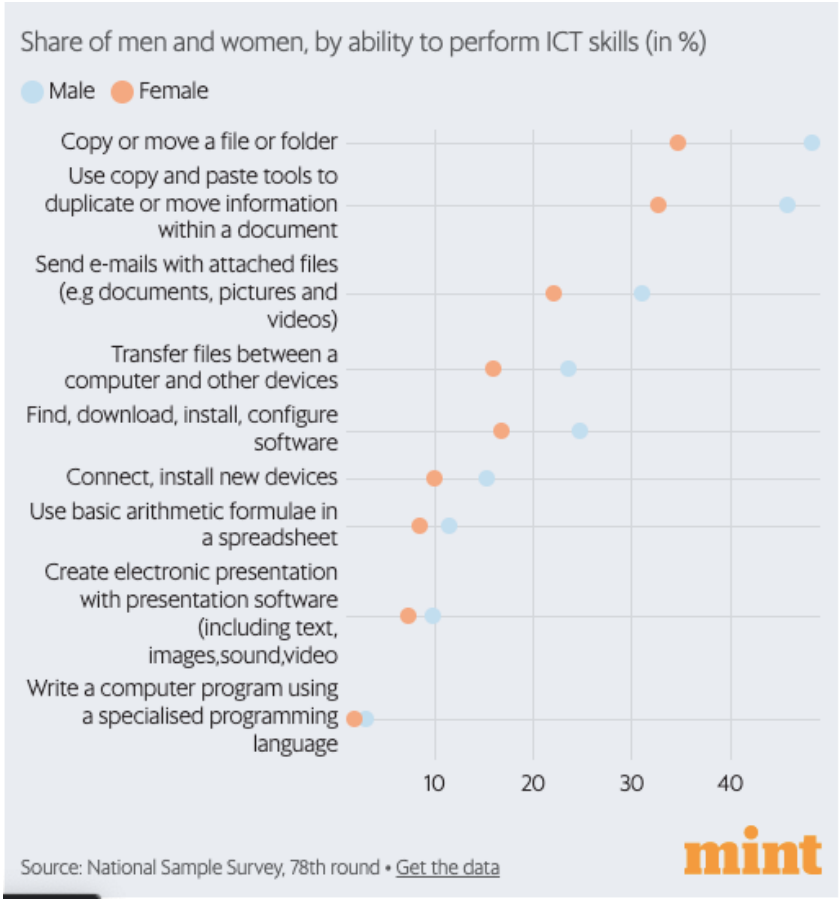

Figure 4.2: Digital literacy competencies of men and women in India (Asrar, 2023).

When assessing India's digital development in relation to gender equality, it is clear that women make less use of digital tools, and also have difficulties accessing the physical hardware and software necessary to be online, and when they do access it, in many instances their devices are borrowed from their partner (GSMA, 2016, p. 75). As accounted for above, we see that women overall, when taking physical and material access, digital literacy, and usage into consideration, score less than men.

4.1.2 Uganda

Uganda is one of the countries in which the access to internet connection and digital devices is the lowest. According to Kemp, only 24,6% of the overall population had physical and material access to information and communication technologies at the start of 2022. Although according to ITU's Digital Development Dashboard 98% of the population in the country is covered by mobile cellular networks, only around 2% have computers at home (ITU, 2023). This might indicate that the physical and material access in Uganda generally relates itself to

the issue of affordability, rather than that the digital infrastructure in the country is an issue (Kemp, 2023).

These numbers give an indication on what to expect from the further steps, both in general as well as specifically related to the digital gender gap. According to the World Wide Web Foundation's report from 2020 shows that men in Uganda, despite the limitations they face in accessing the internet still are 43% more likely to use the internet than women (World Wide Web Foundation, 2020, p. 4). Taking these numbers into consideration, of the total of 29,1% of the overall population using the internet, it leaves little room for women to access the internet.

In relations to the digital gender divide, Uganda very much still finds itself at the second step of physical and material access. APC reports that several reasons can be explanatory of girls' lack of access, and they highlight both affordability as well as stereotypes surrounding technology is preventing girls from using the tools, leading to lower levels of digital knowledge and digital usage (APC; Women of Uganda Network, 2020, p. 3). They observe that affordability in relation to physical access to mobile phones and the internet is still a barrier to women due to their lower levels of employment outside of the home, which leads to lower sources of income (APC; Women of Uganda Network, 2020, p. 6). Furthermore, female literacy levels, which often carries over to digital illiteracy, is lower compared to men's literacy levels in Uganda. Of small percentages of the population using the internet presented above, it is likely to believe that both the digital skills and the usage gaps are quite significant, since many people overall, and women specifically do not have physical access. One way to assess this is to look at the percentages of male and female usage of social media. Kemp shows that women use social media to a lesser degree than men, with 40,8% compared to 59,2% (Kemp, 2023).

4.1.3 Nigeria

Although much of Nigeria is covered by mobile cellular network (ITU, 2023), the internet penetration rate in Nigeria is at around 55,4% of the total population, according to Datareportal's statistics of Nigeria (Kemp, 2023). This suggests that a little under a half of the population remain unconnected. Physical access to network connection is therefore possible in theory, however in reality there remains barriers for people to get connected to the network. An example of this is that only 6% of all households have computers at home (ITU, 2023).

When looking at the numbers for social media usage, there is an overall trend suggesting that men use the internet more than women do, although the number is not as significantly different when looking at the other countries (Kemp, 2023). However, according to CITAD, due to the low level of people having physical access to the internet in their homes, people need to go to other places to access it, such as internet cafés. This discourages women from going, due to such places often being a socialization area for men (CITAD, 2016).

When considering van Dijk's framework, it is reasonable to say that women in Nigeria face a fundamental lack of access to physical and material means to be able to make use of the internet and supporting hardware, keeping them unconnected.

As we have assessed which digital gender gaps can be found within each society, we will now move on to Hofstede's framework of the cultural dimensions. This framework will be used to understand the overall cultural values within each country. This can provide an indication of why women are digitally less included in each country in comparison to men.

4.2 Cultural influence on the digital gender divide

In the following part of this research, we will assess how cultural values influence women's access to digital tools and the internet. To do so, it is important to understand where such values derive from. We will first identify what the cultural values and societal norms are in each country regarding societal structure, technology, and women's roles within such a field. For this, Hofstede's selected two dimensions from his framework will be used. Lastly, we will look at how such values and norms impact the digital gender divide in each country. To analyze this, constructivism will be applied.

To analyze the causes of the digital gender divide in these countries, it is necessary to first consider cultural and normative values in relation to gender in each country. To do so, two of Hofstede's cultural factors will be utilized to base cultural considerations on, namely the power distance dimensions and the masculinity versus femininity dimension (Hofstede Insights(b), 2023).

The ‘power distance’ index refers to whether

“[…] less powerful members of society accept and expect that power is distributed unequally.” (Hofstede Insights(b), 2023)

The ‘masculinity versus femininity’ indexation is explained as

“Masculinity […] represents a preference in society for achievement, heroism, assertiveness, and material reward for success”, “Femininity […] stands for preference for cooperation, modesty, caring for the weak and quality of life” (Hofstede Insights(b), 2023).

These two attributes are good indicators of which aspects of societies are worth looking at when assessing difference between men and women in relation to a specific subject, which is why they form the basic understanding of where to start.

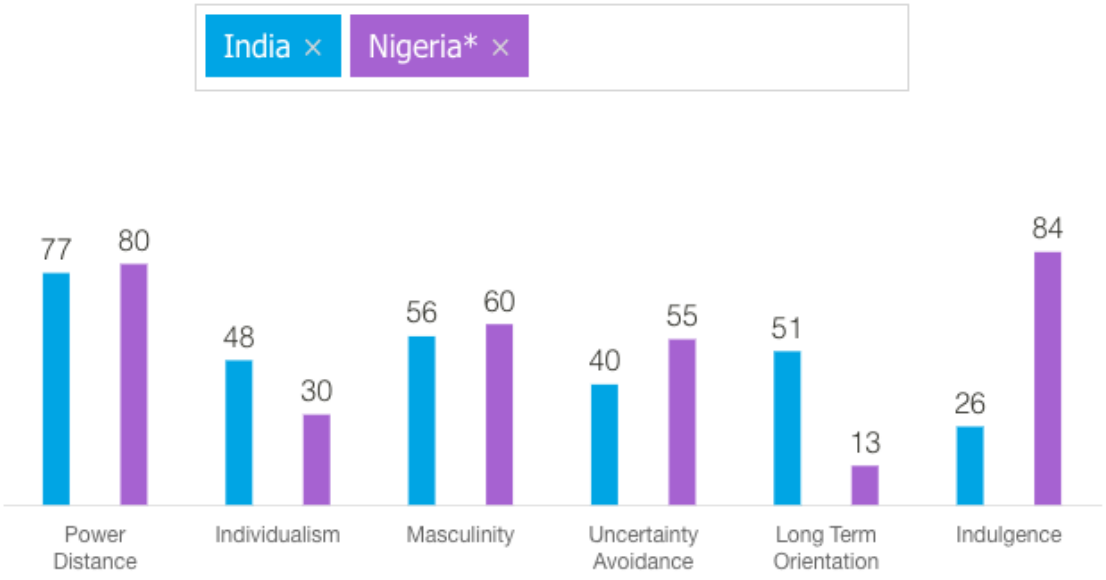

Figure 4.3: Country overview of India and Nigeria (Hofstede Insights(a), 2023)

In the above figure we see the values of power distance and masculinity. Unfortunately, Uganda, which is one of the cases in this research, cannot be found in Hofstede’s country list, likely because there is not enough data to produce an entire report. There does however exist enough research on this country in relation to the digital gender divide, which means that it is still a valuable case to look at. As seen in figure 4.3, both India and Nigeria have a score of over 50 on both dimensions. With power distance, it means that both countries value

hierarchies. When it comes to masculinity, both cultures value a more assertive, successful, and competitive nature (Hofstede Insights(a), 2023).

High scores on both dimensions in Hofstede's framework might have a significant impact on women's access to information and communication technologies. In the following paragraphs, each country will be assessed in relation to the Power Distance dimension and the Masculine versus Feminine dimension. Through this, we can determine part of what their cultural values and societal norms are, and thus look at how the values in each society affect women's digital access, knowledge, and use, depending on where we find the biggest issues, as illustrated through van Dijk's theory earlier.

In the following paragraphs, each country will be assessed in relation to these values. The values will then be used to understand the view on women's roles within these societies, and thus contribute towards an understanding on how such norms influence the digital gender divide.

4.2.1 India

As illustrated by figure 4.3, India scores as high as 77 out of 100 on the Power Distance index, which according to Hofstede's framework indicates that India is a country with strong acceptance for hierarchical structures (Hofstede Insights(a), 2023). Such structures are reflected in various aspects of Indian society, such as the caste system. The caste system can be explained shortly as a social hierarchical structure that divides society into different groups based on a person's birth, occupation, and social status. Although the caste system officially has been abolished, the sentiment of the concept still lingers in the Indian society (Oxfam India, 2022, pp. 15-16). The value of hierarchy is also evident in the way that people relate to authority figures, such as parents, teachers, and political leaders (Jacobsen, 2004).

Central to this hierarchical structure is women's subordinate status to men (Antonio & Tuffley, 2014). An example is how men are perceived as the head of the family. Moreover, traditional gender roles are often defining for societies that value hierarchical structures, in which men traditionally are the providers for the family, whereas the women take care of the home, the children, and the elderly people. The value of hierarchy might be central to explaining why the digital gender divide exists in India.

Moving on to the masculine versus feminine dimension, India has a score of around 56 out of 100, meaning that the culture is not too dominated by masculine values, but is still regarded as a masculine society.

Due to the relative balance between masculine and feminine attributes, there can be found evidence of both. The masculine traits can be identified through how the Indian culture recognizes the importance of ambition, academic achievement, and oftentimes career development (Sharma, 2023). The feminine values can be found in various aspects of Indian society, such as their emphasis on family relations and community creation, as well as it being a spiritual country with a long surviving culture (Hofstede Insights(a), 2023).

4.2.2 Uganda

Despite Uganda not being part of Hofstede's original studies, it does not mean that his framework cannot be used to assess the two values we are looking at in this paper. Rarick, et al., (2013) surveyed Ugandan students in their study on to understand how Uganda would fit into Hofstede's framework. Through this study, it is possible to create an understanding of the Ugandan societal norms and cultural values, which is valuable in this study. According to their findings, Uganda had a relatively low score on one of the two dimensions selected for the research in this paper (Rarick, et al., 2013, pp. 3-4). For the power distance dimension, it was estimated to be 38 through their survey, which means that the society would have relatively low tolerance for inequality in their society. Furthermore, when looking at the masculine versus feminine dimension, the number is 57, which means that although it is not far from the middle, it still values masculine attributes more than feminine (Rarick, et al., 2013, p. 4).

Although the study views only students perception of the Ugandan society, which most likely provides a only a limited understanding of the bigger picture when it comes to the overall population's impression of the Ugandan society, it can still provide a sense of how the younger generations regard the society in which they are growing up, and can therefore also point to how the society will evolve and develop in the future (Rarick, et al., 2013, pp. 7-8).

4.2.3 Nigeria

Nigeria scores very high on the power distance dimension in Hofstede's framework, with a score of 80 out of 100. This implies that there is a strong acceptance of hierarchical order and unequal distribution of power in Nigeria. This should theoretically be reflected in respect for elders, authority figures, and those who constitute positions of power, however there are reports that this respect, especially for constituted authority and law enforcement seems to be faltering (Adewolde, 2023). This does not necessarily trickle down to family values or creates changes in values based on gender. This will be assessed when looking at how norms shape the digital gender divide through a constructivist lens. Nigeria scores a 60 out of 100 on the masculine versus feminine index, indicating that it is a society that values ambition, personal achievement, and success. According to Every culture(c) (2023), this is reflected in Nigerian culture through their value placed on education and professional success.

The concept of power distance and the respect for hierarchical structures in societies can be indicative of the dynamics between men and women in Nigeria, which we will look at further. Using the numbers above offers an insight into how men and women are positioned within such a social hierarchy and can through an analysis of how power is distributed among the genders gives us a base on which to build our conclusion for what impacts the digital gender divide.

According to Olonade, et al. (2021), gender inequality affects all parts of Nigerian society. The hierarchical structure has implications for the dynamics between men and women in Nigeria. As discussed in Olonade, et al.'s article, gender inequality is pervasive in Nigerian society, with significant disparities in employment opportunities and income-generating capacities between men and women. This inequality is also evident in the education sector, where there is an imbalance in educational attainment between the genders, resulting in fewer women being empowered and participating in the labor force, particularly in teaching. In the context of information and communication technologies, this hierarchical structure can limit women's access to digital resources and opportunities to develop digital skills, as reports show that mostly men are employed in this sector (Ifegbesan & Azeez, 2022, p. 3). The traditional roles assigned to women, such as caregiving and upholding societal morals and values, may restrict their access to education and professional opportunities in the digital sphere. Moreover, the patriarchal nature of Nigerian societies often entails that men typically occupy leadership positions which further perpetuates the digital gender divide.

Having created an understanding of what the cultural values are in each country, the following paragraphs will make use of the constructivist framework to analyze how these gaps between men and women are being shaped. The constructivist framework centers around how ideas and societal norms impact what is known to be normal within certain societies (Theys, 2018, p. 41). This framework will therefore be assessed to answer the research question about how cultural values and societal norms shape the digital gender divide in each case.

4.3 How do the cultural values and societal norms shape the digital gender divide in each case?

Assessing the digital gender divide through a constructivist lens allows for an understanding of the phenomenon in question as changeable and man-made. Constructivism explains how norms form the actions and beliefs of individuals, societies, and states, and through this creates cultural norms and beliefs that are perceived as correct by the individuals that live within the space of such a culture (Duryea, 2022). The emphasis constructivism places on the influence of cultures, norms, values, and mindset of people are valuable when looking at the digital gender divide.

According to constructivism, what is regarded as a norm is argued to develop through generations of religious beliefs, speech, and language that have been passed on (Ayukawa, 2020). Through having a certain way of talking about a topic, an underlying idea of what that something is, or who that something is suited for are all ideas made by people. Being able to cement such sentiments in a larger population is necessary for it to be valid over a longer period of time. However, due to the ideas being constructed, as the name of the theory suggests, they can change and evolve with time, which means that ideas, values, or what is regarded as correct, is not static. Looking at the digital gender divide through a constructivist lens allows us to explain the phenomenon of unequal access and usage of information and communication technologies between men and women based on their culture and societal values.

Through the assessment of each of the cases' cultural values, this knowledge will be used to understand how the societal norms have shaped and influenced the digital gender divide in each country. The aim is to see whether the cultural values from Hofstede's framework

actually can explain the digital gender divide in each case that was investigated through van Dijk's digital divide framework. To do this, we will look at how the societal norms in each case shape the digital gender divide through a constructivist lens, with the emphasis on how technology is associated with gender.

4.3.1 India

As observed above, India has high scores on both the Power Distance dimension and the Masculine versus Feminine dimension. As outlined by Saurav (2020), these scores reflect the deeply entrenched patriarchal norms of this society. A constructivist perspective emphasizes the learned societal structures in the Indian society in which traditional gender roles prevail. Men's roles are predominantly outside the home, engaged in earning for the family, whereas women's roles are within the domestic sphere, taking care of household needs, children, and elderly family members (Barboni, et al., 2018, p. 15).

Pande's observation (2006, p. 192) about the relatively low social status of women in this Indian society, made visible through limited access to education and resultant low literacy levels, is a manifestation of these constructed societal norms. Women's lack of education and literacy translates into digital illiteracy because of lack of digital training that they would otherwise receive through their education. This results in women either not being employed in the IT-sector, or only getting employed in the lower skilled jobs, which is a contributing factor to the digital gender divide. The lower representation of women in higher-skilled jobs in the IT-sector, as Pande notes, is a direct consequence of societal norms dictating women's role in Indian society (Pande, 2006, p. 194).

Pande argues that the digital gender gap is mainly due to these two aspects. While these aspects may indeed be important factors contributing to the digital gender divide, as illustrated through Barboni, et al.'s (2018, p. 13) graphs, there are several stories that showcase how women's physical and material access is limited by governmental regulations and societal initiatives. According to Oxfam's India Inequality Report (Oxfam India, 2022, p. 21), it is the male in a household that decides if and who may use and/or own a mobile phone. This is reflected in several instances, where there have been bans on women's access to mobile phones if they were underage or unmarried, mainly in rural villages (Bellman & Malhotra, 2016; Lewis, 2016). These restrictions are often justified under the pretext of preventing distraction from education, protection of social and cultural values (like preventing

love marriages), ensuring safety, and controlling women's movements and communications, and happen both within homes, but also within larger communities. Bellman and Malhotra (2016) report that it is often fathers, husbands, and elderly people that support these bans, which strongly reflect their emphasis on patriarchal structures within the larger community as well as within the family. This confirms OECD's findings of family's support influencing women's usage and access to the internet (Gruen, Ibarra, & Ramos, 2018, p. 23).

The lack of similar collective bans on mobile phone access for specifically boys and men, and how their use would affect the feared outcomes outlined above, underline the gender bias in these societal norms (Oxfam India, 2022, p. 21). Even in the instance described in Bellman and Malhotra's article (2016), where mobile phones were confiscated from women under the age of eighteen, because of harassment by a male teacher, the girls were perceived as '*more susceptible to bringing shame upon themselves*'. A seemingly common sentiment is that it is viewed as indecent for girls to own or use smartphones, and the idea that a woman's purity is more fragile than that of men prevails (Barboni, et al., 2018, pp. 10, 17). The lack of similar bans for boys and men underscores the double standards applied to men's and women's behavior.

When assessing the above situations through the lens of constructivism, it is evident that there are deep-rooted societal norms that prevent women from accessing the digital world and thus shape the digital gender divide. The heavy influence of traditional values, such as purity, dependence on and respect for the patriarchal structures both within the household as well as within society largely determine the access women have to information and communication technologies. Through Barboni et al.'s research, they found that the perception the community would have of a girl using a mobile phone would change negatively, thinking she would use it for things that are perceived as unsuitable to women, causing them to engage inappropriately with other, mainly men (Barboni, et al., 2018, p. 17).

Moreover, marriage is seen as an institution that legitimizes women's access to mobile phones (Barboni, et al., 2018, p. 18), indicating another example of how societal norms shape the digital gender divide. Women's access to mobile phones gets easier as soon as she is married, because she needs it to communicate with her family. The belief that women's purity is compromised if they own a mobile phone before marriage is likely based on constructed narratives aimed at protecting and controlling women, as well as highlights a potential

underlying fear that access to technology might be able to empower women and disrupt established gender norms. This, along with the societal norm where women's primary roles are domestic, perpetuates the digital gender divide.

The outtakes from this article provide examples of social norms and cultural values having a significant impact on the physical and material access to digital technology for women, which is mainly determined through patriarchal structures and women's subordination to men. The bans directly deny women's access to technology. In India, mobile phones are often the primary means of internet access and without them women cannot use digital services or participate in the digital economy (Bundhun, 2022; Matusitz & Musambira, 2013, p. 49). Mobile phone bans for women therefore directly contribute to the digital gender divide, and impact the purpose, duration, and location of mobile phone usage (Barboni, et al., 2018).

4.3.2 Uganda

Based on the study by Rarick et al. (2013) study of students' perception of Hofstede's cultural dimension, we see that there is a significant difference from the two other countries in this study. From a constructivist perspective, the variance in perception of Hofstede's cultural dimensions, as elucidated in the Rarick et al. (2013) study, provides an intriguing insight into the societal structures of Uganda. This research suggests a lower societal tolerance for hierarchical structures, which might intuitively imply greater accessibility to technologies for women. Yet, counterintuitively, the African Media Agency (2020) reports that men are 43% more likely to use the internet than women in Uganda. This apparent contradiction can be better understood through the lens of constructivism, which posits that social realities are constructed and influenced by social forces and cultural norms.

The data presented earlier, indicating a discernible digital gender gap in Uganda within van Dijk's digital divide framework, underscores the fact that societal constructs continue to influence technology access and usage. The Uganda Bureau of Statistics (2019, p. ii) attributes these enduring gender inequalities to a confluence of formal and informal institutions, including patriarchy, religion, family, marriage, and diverse socio-cultural practices.

Furthermore, a study done by Oxfam (Oxfam International, 2018) aimed at showing patterns in paid work between men and women in Uganda, as well as assessing the attitudes towards

paid work between men and women gives an insight into the societal norms within different areas of Uganda. Not only does it highlight the fact that women are more involved in domestic, unpaid work, but it also provides an insight into the perception of the tasks being more suitable for women than men (Oxfam International, 2018, pp. 22-27, 45). Although there are variations between the districts, there is an overall acceptance of household work being mainly a women's task in which men can contribute if necessary. It is interesting to observe, however, the various beliefs surrounding men helping with care work, especially when it comes to cooking. The report finds several instances in which men are perceived as controlled or "bewitched" by women if they help in the kitchen (Oxfam International, 2018, p. 46). This deeply held cultural belief that men who work closely with their wives are considered to have been bewitched is a social construction that has been developed and maintained over time within the society. By having phrases that explain this, means that it is internalized in their language and thus reinforces differences in the gender roles.

Although the previous example does not directly relate to the digital gender gap in Uganda, it provides an example of how perception on different gender roles excludes women from participating in paid work, including work within the information and communication technology sector, which carries over to access to and knowledge of data. It also indicates the relative independence men have compared to women, where women are largely economically dependent on the man, which again reinforces hierarchical structures within the society, as well as within families.

Additionally, the Women of Uganda Network explain how women experience larger barriers when they do have physical access to information and communication technologies, claiming that women are less likely to be digitally literate, thus impeding them from using the internet, as well as being more likely to face gender-based violence online, which is likely to hinder their usage as well as the frequency of use (Women of Uganda Network, 2022). Issues related to gender-based violence impacting the digital gender divide is confirmed in a different report by APC and Women of Uganda Network (2020, p. 7). They also observed that men's traditional control of women's whereabouts and social contact has been reduced with the access to the internet, in which women have the freedom to contact people without their husbands or family's consent. This could lead to more frequent incidents of gender-based violence, which potentially could hinder the frequency of use (Women of Uganda Network, 2022). The overall social acceptance of such behavior, as well as the amount of women who

reportedly have experienced some form of online harassment reflects established cultural norms and ideas that trigger such behavior. An example is the amount of control husbands expect to have over their wifes.

The patriarchal structures of Ugandan society are reflected in the following sentiment in relation to information and communication technologies: "*Men decide when a woman should communicate. It's men who give women data. And they also want to find out who their wives communicated to"* (Kiyonga, 2020). This statement underscores how gender roles and relations, as constructed and maintained within the patriarchal Ugandan society is a significant factor in the continuing gender disparities in internet use, which aligns with a constructivist perspective. When considering this statement through a constructivist lens, it is evident that the notion that men hold dominant societal roles in societies through controlling women's access both to the internet and mobile phones. This illustrates the power dynamics in Ugandan society, and thus shows how such socially constructed power dynamics influences and perpetuates the digital gender divide (Kiyonga, 2020).

Moreover, constructivism helps us understand that these perceptions and behaviors are not fixed but are continually formed and reformed through societal interactions. Such changes might be reflected in Rarick et al.'s study (2013), where young students answer low on the power distance dimension in Hofstede's framework. Even in a society with seemingly less tolerance for hierarchical structures, the digital divide persists, highlighting the profound influence of socio-cultural constructs on gender roles and access to technology. Although we cannot know whether or if at all these values will be reflected in Ugandan society in the future, it does allude to the fact that norms and cultural values can be influenced and possibly changed over time. If it does, it might provide a potential avenue for reducing the gender disparities in internet use.

4.3.3 Nigeria

As Ifegbesan and Azeez (2022, p. 3) note, the Nigerian culture is deeply patriarchal, which leads to big disparities in what men and women are expected to do, as well as what their opportunities are within the societies they live in. Onmuwah, et al. (2019, p. 14039), observe that within the various Nigerian ethnic groups there is evidence of gendered language consisting of words describing men in a positive manner and women in a negative manner.

They argue that such language in ingrained in the Nigerian language. As Debrix argues (2003, pp. 8-12), language is one of the main indicators as well as drivers of societal norms. It is through language that cultural values are constructed and sustained, and thus shapes the attitudes towards each gender.

The World Economic Forum also points to women's lack of contribution to the 'technological ecosystem' in Nigeria due to the overall gender differences in the country (Momodu, 2023). CITAD (2016) reported that a majority of men were opposed to their wife's using the internet, which according to their findings is largely due to religious beliefs. An important finding is that women as well as men have internalized the sentiment that the use of internet is bad for women, meaning that although if a husband would allow their wife to access the internet, she might not do it due to religious beliefs or cultural norms (CITAD, 2016, pp. 2-3). In this case, it might be religious language that has shaped the way people perceive the internet, through preaching about the various expectations society has towards men and women in relation to technology. As Debrix (2003, p. 6) emphasizes, constructivism focuses on the normative aspects of language, and therefore considers the way women and technology are being spoken about when combined.

Physical and material access thus become hindered through experienced opposition men have towards women's use. Adeleke, et al. (2022, p. 540), observe that the cultural practices within Nigerian society which put women in a subordinate position to men, is affecting women's levels of literacy, since domestic responsibilities are considered to be more valuable than a formal education. Higher levels of illiteracy reduces both the opportunities for employment, as well as the internet usage. As Mann et al. (2016) point out, higher levels of education often goes hand in hand with internet usage. The idea that it is more valuable for women to do domestic work rather than get a formal education is a constructed reality that severely impacts women's digital knowledge and use of technologies, because lower levels of education reduces the frequency or incentive to adopt technologies. This is also reflected in the low presence of women in STEM (Science, Technology, Engineering, and Mathematics) fields (African-China Reporting Project, 2022) This is an example of how cultural values towards the value of formal education for women impacts the prevalence of the digital gender divide (Abeku, 2023).

Such internalized beliefs have a prominent impact on the digital gender divide. Fatai (2020) notes that cultural values get in the way for women to fully participate in the tech industry. An example is that female entrepreneurs face difficulties getting investors when the male investors are married, because it could be perceived as inappropriate (Fatai, 2020).

Another prevalent issue observed in Nigeria is the amount of online content that is harassing women, either through unconsented sharing of pictures, or the type of language is used online (Adeleke, et al., 2022, p. 533). Furthermore, if households do not have internet access and people need to go outside of their homes to access computers, such meeting points are often dominated by males or completely closed off to women (Antonio & Tuffley, 2014). The lack of similar meeting places for women, and the disproportionate negative gendered language online are both cultural factors that deter women's adoption of information and communication technologies, which further hinders their access to and usage of the internet and thus the information and knowledge available there.

Through the lens of constructivist theory, the challenges women in Nigeria face in accessing and utilizing digital technology are reflective of socially constructed norms and practices that perpetuate gender disparities. The presence of online harassment and the dominance of men in public digital spaces exemplify the construction of an environment that is hostile towards women's digital participation (UNFPA, 2023). These conditions elicit and uphold the patriarchal and masculine structures within the Nigerian society. The notion of gendered spaces in the digital world, where men dominate and women are excluded, is a manifestation of societal beliefs and traditions, reinforcing women's marginalization in the digital sphere. Furthermore, the gendered, and often hostile language and actions that women encounter online can be argued to reflect the normalization of misogynistic behaviors in the digital realm. These values are not innate, but rather perpetuated through social interactions (Debrix, 2003). Consequently, the digital gender divide in Nigeria is not just a product of economic or material disparities, but also deeply embedded and socially constructed gender norms that deter women's full participation in the digital sphere.

4.4 Benefits of digital gender inclusion and recommendations for further research

Before presenting the concluding remarks of this research, is it imperative to consider the benefits of the digital inclusion of women. This aspect is important to consider due to its effect on overall offline gender equality, economic benefits, and societal benefits. As

highlighted in the beginning of this paper, Arora argues that it is of great importance to connect everyone who is currently unconnected because of the current inaccessibility to the overall talent pool, knowledge, and information consisting in the world. In her view, the internet is a cumulation of all the collective knowledge humans possess, and when so many people remain unconnected, the rest of the world misses out on a lot of knowledge (Arora, 2019). With the observed digital gender gap across most of the world, the likelihood that women

Additionally, there is evidence that the digital exclusion of women has a severe economic impact. Alliance for Affordable Internet (2021, p. 4) studied 32 low and lower-middle income countries, and estimated that they have missed out on $1 trillion USD in Gross Domestic Product as a consequence of women not being connected in equal capacity as men. When evaluating the importance of equitable connectivity for women, it is not only important for women's empowerment, in relation to economic independence, employment opportunities, and access to information, within societies they live in and within their families (The Broadband Commission, 2013, p. 10), it would also allow them to economically contribute to their countries. According to Alliance for Affordable Internet, digitally including women would likely increase economic activities in these countries with more than hundred billion USD in just a few years (Alliance for Affordable Internet, 2021, p. 4).

Taking this into consideration there are several recommendations for further research. Although several international institutions work on mapping the benefits of including women online, as well as calculating how much the digital exclusion of women will cost societies where women in general have less access to and knowledge of digital tools and the internet, there is still limited research available on this topic. Knowledge of how much national economies could gain if women have equal access to the internet, digital knowledge, and digital tools were not restricted in large due to gender stereotypes, social hierarchies, or perceived appropriateness, could potentially incentivize the acceleration of the inclusion of women.

Furthermore, due to the small scale of this study, the findings are not generalizable, and are thus limited in how much knowledge they contribute to the overall challenge that is the digital gender divide. It would therefore be interesting to see whether the findings of this research can be applied elsewhere as well. This would potentially require a quantitative research

design in which cultural norms and values are quantified through variables. Based on the figures in the first and second chapters, it is evident that the digital gender gap is larger in the Global South. It could therefore also be interesting to assess whether the countries in the Global North have different cultural values, and to look at how these affect women's access to digital tools and digital knowledge.

Lastly, this study looked at genders through the biological lens, not an identity lens. As a curiosity, and something that is more relevant today as gender stereotypes and expectations are broken down, and the term gender is more fluid, it would be interesting to investigate whether there is a digital gender divide within the context of identity politics. Considering many people today do not place themselves within the traditional male and female 'boxes', but instead somewhere in between or outside of these, it would be valuable to research whether this affects their access to and knowledge of information and communication technologies. If there would be negative results, showing that there is indeed, or potentially could become a gap between different parts of society based on how they identify themselves, researching it at an early stage could prevent the gap from becoming too big.

Chapter 5: Conclusion

This study aimed to answer the question on how cultural values and societal norms impact the digital gender divide. Three different countries were selected as cases for this study, based on their evident digital gender gap. The relative lack of qualitative studies on the digital gender gap, and the claim that any digital gaps between men and women are rooted in societal norms spurred the interest to assess this topic further (Sterling, Grubbs, & Koutsky, 2020).

The study first identified where the digital gender divide could be found in each case through van Dijk's Digital Divide framework (van Dijk, 2002). In each case, various digital gender divides were found, both in access, skills, and usage. The analysis went on to explore the cultural values of these three countries through Hofstede's framework for national cultures, where two dimensions were selected that could have direct impact on the digital gender divide: the power distance dimension, and the masculine versus feminine dimension (Hofstede Insights(b), 2023). Considering the findings from Hofstede's framework, the analysis aimed to link the norms in each country with empirical evidence found in the

secondary sources and considered how cultural values and societal norms shape the digital gender divide through a constructivist lens.

Through the analysis, it is evident that the digital gender divide in India is influenced by a complex interplay of societal norms, cultural values, and physical access to devices, such as mobile phones or computers to access the internet. Examples of cultural values is particularly the hierarchical structure within the Indian society, and consequently women's subordinate status to men, expected to contribute more domestically rather than through formal employment (Bellman & Malhotra, 2016; Bundhun, 2022). The linkages drawn between the three theoretical perspectives demonstrate how the various elements contribute to the digital gender divide, both in relation to physical access, digital knowledge, and usage. The role of cultural norms and societal structures, as explained through the lens of constructivism, provides crucial insight into why the digital gender divide persists, despite the presence of infrastructure and otherwise a strong emphasis on work within the IT-sector (ITU(a), 2023; Khurana, 2023). This highlights the importance of addressing societal values and norms in attempts to close the digital gender gap. The analysis underscores the need for multifaceted solutions that do not only look and expanding digital infrastructure, but also tackle socio-cultural norms and provide targeted digital literacy education for women.

Uganda presented a unique case of the digital gender divide, with a lower proportion of the population having access to digital technologies and the internet, largely attributable to affordability constraints, as well as different outcomes on Hofstede's cultural dimensions framework. A significant gender divide in internet usage exists, with men estimated to be 43% more likely to use the internet than women (African Media Agency, 2020) . Despite seemingly lower societal tolerance for hierarchical structures, as indicated through Rarick, et al.'s study (2013) of Hofstede's cultural dimensions in Uganda, a significant gender gap persists in internet usage. While physical access and affordability are clear barriers to digital adoptation, the influence of socio-cultural norms and perceptions of gender roles seem to play a critical role in the existing disparities in digital access and usage (Oxfam International, 2018, pp. 22-27, 45). The patriarchal structures in Ugandan society appear to significantly influence women's digital engagement. The notion of men controlling women's communications and access to technology underscores the societal structures that continue to exacerbate the digital gender divide (Kiyonga, 2020; Women of Uganda Network, 2022).

From the research, it is evident that the digital gender gap in Nigeria is influenced by deeply rooted societal and cultural norms and expectations towards women, even though there are reports about the faltering respect for authoritative figures (Adewolde, 2023). The intricate relationship between access to technology and societal structure offers critical insight into the challenges faced by women when they adopt new technologies. Notably, the research highlights the prevalence of patriarchal norms on women's lives, which shapes not only concrete aspects such as access to education and employment, but also more subtle aspects such as societal perceptions, attitudes, and values (Adeleke, et al., 2022). The prevalence of gender specific barriers, including patriarchal norms, gendered language, and the continuous notion of masculinity, points to a social construct that is not easily dismantled or modified. In Nigeria, women are not only physically and materially excluded, but they are also psychologically and socially deterred from actively participating in the digital world, through gendered language and limited social spaces for women that wish to use the internet or computers (CITAD, 2016; Onmuwah, et al., 2019). The dual aspect of exclusion contributes to an even wider digital gender divide. The issues that Nigerian women face when accessing digital technology, such as online harassment, negative gendered language, and exclusion from public digital spaces, underscore the importance of creating an online environment that is safe and inclusive for all users (UNFPA, 2023).

Based on the selected case studies, it is evident that there is still a way to go before closing the digital gender gap. Although Hargittai (2002) argues that digital skills and internet, software, and hardware usage will increasingly be the core of the digital gender divide, we have seen that in several societies, women in particular struggle to get physical and material access to the above tools, largely due to cultural values and societal norms. Although the three countries scored differently within Hofstede's framework, and experienced different levels of the digital divide between men and women, we can still observe the societal norms that shape the digital gender divide are relatively similar in all instances.

Respect for the hierarchical structure of society, and thus acceptance for patriarchy, in which men are the heads of the household, has a large impact on both physical access as well as digital knowledge and usage. Physical access is hindered by lack of phone ownership by women (Butler & Shanahan, 2020). Men are found to be the owners of technology, which women may borrow. In India, mobile phones were banned for women, preventing them from physical access to the internet (Barboni, et al., 2018; Lewis, 2016).

Through beliefs surrounding women's fragility and impurity by the use of internet, the effect of the language used is seen in people's perception of technologies' suitability for women (Barboni, et al., 2018, pp. 10, 17; Onmuwah, et al., 2019). Alliance for Affordable Internet claims that: "*Together, the financial, technical, safety, and educational gaps faced by women on an individual basis accumulate into a social norm that reinforces the myth that 'access to technology and the internet by women is … immoral, inappropriate, or unnecessary.' This myth discourages women and girls from participating in the online world*" (2021, p. 8).

Cultural values, such as women's contribution to domestic work and thus informal education influence both digital literacy levels, as well as the frequency of use (West, Kraut, & Han Ei, 2019). Lastly, lack of social spaces for internet usage and access for women, as well as the control men have in general within households influences women's usage, since the possibility that they are being controlled is present (CITAD, 2016). Furthermore, the prevalent preference of masculinity rather than femininity also cements men's roles within these societies and shapes the idea that technologies and digital skills are reserved for men (Anunobi & Mbagwu, 2009, p. 267).

The findings in this study thus contribute to the growing body of research that explores the digital gender divide from a sociocultural perspective, rather than purely economic or materialistic. By emphasizing the societal and cultural influences, this study can lay the basis for more holistic and nuanced strategies to address the digital gender divide in the future. As explored in this research, it is crucial to consider the underlying societal and cultural barriers that hinder women's full participation in the digital world. Only then will equitable access to connectivity and the digital world be achieved. This includes creating safe online spaces, promoting positive gender narratives, and challenging patriarchal norms and biases that perpetuate gender inequality in the digital realm.

The analyses of each country have shown that cultural values and societal norms have a significant impact in shaping the digital gender divide. The values identified in each case manifest themselves in different forms, such as traditional gender roles, domestic expectations of work, linguistic practices, and power dynamics, all of which have profound impacts on women's access to, usage of, and participation in the digital world. The research has shown that such values and norms, which are deeply embedded in the societies analyzed, shape the

opportunities and constraints that women encounter in their engagement with digital technologies.

As closing remarks, it is important to underline that overcoming the digital gender divide requires a holistic and intersectional approach. This means understanding and challenging the complex web of social, economic, and cultural factors that prevent women from accessing and benefitting from digital technologies. For any digital inclusion policies and initiatives to be effective, it is important that they take into account these societal and cultural nuances explored in this research, and actively aim to address the deep-seated norms and values that contribute to the digital gender divide. In essence, bridging the digital gender divide is not just about providing access to technology, but about redefining societal norms and structures that restrict women's full participation in the digital realm.

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