European Journal of Human Resource Management Studies
ISSN: 2601 - 1972
ISSN-L: 2601 - 1972
Available on-line at: http://www.oapub.org/soc

DOI: 10.46827/ejhrms.v5i1.1006 Volume 5 | Issue 1 | 2021

THE OBSTACLES OF WOMEN'S EMPLOYMENT IN SAUDI ARABIA IN THE DIGITAL TECHNOLOGY AGE

Nailah Hassan Gadi[i]
Hull University,
United Kingdom
Taif University,
Saudi Arabia

Abstract:
The dynamic technological changes worldwide have changed the way of life for individuals and communities during the recent decades. The most crucial changes that in the work environment and opportunities for pursuing careers, in particularly for women. The current research paper focuses on one aspect of key findings of a doctoral study aimed at identifying and investigating the obstacles of the employment of women in Saudi Arabia labor market in the digital technology era. The research followed the qualitative approach to collect the data needed through conducting interviews with a round 40 participants including three stakeholders (Government, Academia, and businesses). Five main obstacles have been identified and are discussed. They are socio-cultural factors such the dominate role of men, and lack of family support. In addition to that, insufficient experiences and training in digital technology, and finally childcare system in KSA. Further efforts are needed to raise the society awareness towards the role of women as human capital to participate in the nation's development, and efforts are needed by different stakeholders to empower, support and enable women to engage in labour market effectively.

Keywords: digital technology, obstacles of women employment, socio-cultural factors. system support, businesses

1. Introduction

Over the recent past decades, the information and technological revolution has made great changes in business environment on all over the globe. The economy and business influenced largely through adopting new work methods to handle the operational performance of business inside the economy. The economy itself has changed from a traditional style to knowledge economy. According to Reis, J. et al, (2018), with the rise of new digital technologies, e.g., social networks, mobile, big data, etc., the society as a

[i] Correspondence: email nailahalgadi@yahoo.com

whole is facing a fast and radical change due to the maturation of digital technologies and their ubiquitous penetration of all markets.

On the other hand, Matt, C., et al. (2015) argued that, digital transformation affects all society's sectors, in particular economies, where companies now are given more opportunities to radically change their business models by new digital technologies like social networks, mobile, big data, internet of things, other innovations like block chain.

Therefore, this mostly involves changes of the core business operations and modifies products and processes, as well as organizational structures, as companies ought to set up management practices to conduct these complex transformations.

In regard to the effects of digital transformation on women employment, Krieger, C. & Sorgner, A. (2018) confirmed that, digitalization offers a variety of opportunities for female empowerment and for a more equal female participation in labor markets, financial markets, and entrepreneurship. Adding that, currently, digitalization seems to favor female labor force, since women face on average lower risk of being replaced by machines, as compared to men. In the same way, there are many opinions supporting the empowerment of women to participate in the economic cycle, and suggested that, the women's economic empowerment can be realized in the modern times through the increased exploitation of women in the employment opportunities created by the digital technologies. Rajkhan (2014) argues that digital technologies offer leverage to the enhancement of women's economic empowerment if labor market is properly regulated with the goal of providing right and space to the women.

In a study conducted by Niculin, D. (2017) to investigate the determinants of female participation in the labor market in developing countries with a focus on the impact of the use of ICTs on female labor force participation. The results confirm that there is rather a positive impact from the use of ICTs on female labor force participation in developing countries. In addition to that, the results show that gross national income (GNI) per capita, fertility rates and income inequalities influence to some extent the level of women's engagement in the labor market.

There are various studies conducted supporting that the Information and communication technologies (ICTs) have played an important role as a key solution for comprehensive development, poverty elimination, and the empowerment of groups discriminated against in society. One of the important effects of the proliferation of ICTs is the influence on the labor market, both through the creation of new jobs (ICTs as a sector) and making labor markets more inclusive, innovative, flexible, and transparent (ICTs as a tool). Raja et al., (2013) refer that, the relationship between ICT adoption and labor market outcomes is worth studying, as reflected in numerous studies. On the one hand, it is widely argued that ICTs enable the inclusion of low-skilled and traditionally marginalized groups, such as women, people with disabilities and workers at the base of the pyramid, into the labor market (Raja et al., 2013).

In a study conducted by Sovbetov, Y. (2018) aimed to examine the impact of digital economy on female employment, in particularly in Muslim countries, argued that, any endeavors to scale the female labor participation up are frozen due to social and cultural barriers against female interaction with men. The segregation of the sexes in public or

social locales is as another fence against acceptance of female within working environment, particularly in management positions. He pointed that, the only possibility of enhancing female participation was related with logistical issues such as creating female only working places, special entrances and other separation regulation, which make it hard. However, with digitalization an alternative way is emerged. The barriers can be broken down through e-commerce, which enables females to work from home in jobs such as customer services over the internet or even start-up self-employed online businesses.

Therefore, the current research paper, will contribute to the relevant literature by examining the main obstacles of employment of women in the digital era, in Saudi Arabia as one of G20 countries members in the world, and as an economic power in the Middle East. The researcher will attempt to tackle how digital transformation influence on women's employment through understanding the opportunities it creates, and to examine the skills needed to empower women to participate effectively in labor market in Kingdom of Saudi Arabia, and the main suggested solutions to tackle the problems facing women employment in Saudi Arabia labor market.

1.1 Problem of the study

Digital technologies, e.g. social networking, mobile, big data, etc. have become one of the new radical change worldwide. There are various research efforts view that, the digital age is providing opportunities to decline the inequality between males and females in the labour market Nakafeero et al., (2013); Perez Perez et al., (2004), Raja et al., (2013). However, Iglesias Fernández et al. (2010) argue that such a possibility will not be automatic but rather it will require a range of measures taken at a policy level by developed and developing states designed to bridge the 'digital divide' between men and women.

According to Davaki et al., (2018), the participation and accessibility to the digital training and education is considered a key factor in empowering women via digital technologies, which may be affected by the cultural and social-economic norms of societies. In line with that, in Saudi Arabia, the government has taken serious steps to empower women to contribute in labour market. As reported by Rashad and Kalin, (2019) that in order to promote participation of women in the labour market, government has taken many steps such as allowing women to drive independently, traveling of women without male chaperons/custodians. The lifting of bans on free movements of women are expected to increase the women's capability to acquire knowledge, skills, and job search for women in the high-tech industry.

Thus, the current research problem is to explore the main obstacles facing Saudi women to get employment in digital technological era, and how digital technology enable women to participate effectively in labor market. And, what are the skills required to support that women engagement in the economy, and what are the best suggestions to tackle the challenges facing the women participation.

1.2 Research objectives

This research paper attempts to achieve the following objectives:

1) To explore the main obstacles that facing Saudi women employment in labour market in the digital age.
2) To investigate the f ICT's skills required to empower the employment of women in Saudi Arabia.
3) To determine the challenges to be taken into consideration by all who involved in empowerment of women to participate in labour market and get benefits of the digital technologies created employment opportunities.

1.3 Research questions

To accomplish the main research objectives, the researcher set the following questions:

1) What are the main obstacles that hinder Saudi women employment in the labour market in the digital technology age?
2) How do digital technology provide opportunities to Saudi women that enable them to successfully participate in and contribute to the new economy created by the application of digital technologies?
3) How do participants interpret the challenges facing Saudi women and what suggestions proposed to tackle the problems and challenges to benefit of jobs created by the information and communication technology?

2. Literature review

2.1 Digital technology and women employment

In fact, the recent advances in information and communication technological aspects have resulted in crucial changes in all style of life worldwide. There are various studies conducted to investigate the effects of digitalization on jobs. As reported by Boden. C. K. & Sorgner, A. (2018) that, technological changes will increase the relative demand for those tasks and skills they complement, and reduce the relative demand for those tasks and skills they can replace. In addition to that, past computerization and automation of workplaces has been complementing primarily non-routine abstract tasks typically performed by high skilled workers, including managers, and professionals, however these changes replaced routine tasks typically performed by medium skilled workers, including clerical and assembly line workers. Whereas a recent study conducted by Frey and Osborne (2017), in regard to the effect of digital technologies on occupation in U.S., has arrived at a conclusion that, there is about 47% percent of the US labor force faces a very high risk of digitalization of their jobs in the foreseeable future.

2.2 Barriers to the use of digital technologies

The use of digital technologies as new methods affecting the opportunities for both males and females as job seekers, require the availability of skills that match the use of such technologies. Therefore, as investigated by Antonio and Tiffley (2014) that, the women's access to training and the use of the digital ICTs must be examined in terms of the existing

and potential opportunities in the labor market. While, according to Gil et al. (2010), there are four key factors, which serve as key social/maternal barriers to the access to and the purposeful use of the digital technologies. The factors include "exclusion from technology education and design; limited free time; social norms favoring men; and financial and/or institutional constraints. Whereas Hafkin (2002) identified the 'collateral cultural factors' which are defined by "*cultural attitudes based in gender bias, and not the immediate gendered identification of technology use*".

In the contexts of Saudi Arabia, the globalization of technology is supposed to have an impact on Saudi Arabia in various ways and creating a tension in Saudi society between conservative members who promote the status quo and liberals who support women's issues. Furthermore, in terms of women and technology, most studies e.g. Metcalfe (2011); Elamin & Omair (2010); Binsahl et al. (2015); Nasseef (2015); Abalkhail & Allan (2015) highlight women's issues from a global perspective, but those that focus on Saudi women mostly discuss employment and the workplace.

In regard to barriers that, facing women to access employment opportunities, I think there is a much debate on inclusion and exclusion of women from accessing the digital technologies, meaning that there is a dearth of information from Saudi context, how female workers' think of their upbringing, socialization, education, and their ability to access to training. According to Elamin & Omair (2010), the customs and social-cultural trends that continue today can be presented to reduce the level of participation of Saudi women in the development of their country alongside men. In effect, a conservative interpretation of the state religion continues applied to justify women's life choices and determine their career options

In regard to the education system influence on women employment, a study conducted by OECD (2018), it is argued that women are significantly less likely to choose natural sciences, engineering, and ICT studies. The results found that, in 2015, women only accounted for 30% of all students graduating in these fields at tertiary level. In addition to that, women represent only 20% of tertiary graduates in ICT-related studies – fields which are particularly relevant for the digital era. Another study conducted by Al-Hudhai, & Nalband (2005) which focus on the use of information and communications technologies (ICT) to generate employment for women in Saudi Arabia. The results reveal that, the lack of representation of female in the field of Information Technology has been studied by various researchers to find the root causes of lack of interest of women in IT field and it is found that education experience, gender, age and school setting were reported amongst the causes.

Furthermore, Olatokun (2009) also agreed to the views of Hafkin (2002) that exclusion of females from the access to the digital technologies is the collateral cultural barrier which need to be overcome through the awareness and empirical research showing the full-swing benefits of digital ICT' use and training for women and subsequent positive impact on the social and cultural fabrics. While according to societal and cultural perceptions of women's education and employment, beginning with Prasad and Sreedevi (2007) observed that sociocultural norms still control women's access to IT

and so discourage interaction between genders owing to segregation in schools in the education system typical of Arabic countries.

Moreover, a critique of patriarchal structures, a more recent study performed shows that a gender-segregated culture is an important factor influencing Saudi women's use of technology (Binsahl et al., 2015). While Alhareth et al. (2015) recognized that there are two competing values in Saudi society: keeping up with the technology revolution while at the same time preserving religious beliefs and cultural values. In their study, Al Alhareth et al. (2015) gives the example of e learning as an important issue in Saudi Arabian culture, arguing that some members of the society may not accept new technologies.

In conclusion to the above analysis and arguments, we can say that the socio-cultural belief persists across the world today that there are clearly demarcated men's and women's occupations. Indeed, I might argue here that gender bias also encompasses education, where it is commonly held that STEM subjects are better suited to boys. Moreover, in the case of technology, there is a common perception that women play a far greater role as consumers rather than creators or producers. These social-cultural beliefs contribute to low the participation rates of women in technical education, technology-related employment and in the actual creation of new technologies.

3. Methodology and materials

3.1 Methodology

In this study, due to the nature of the problem, which require the collection of information from different parts to investigate the obstacles of women employment during the digital technology era, the qualitative approach has been adopted. The qualitative approach as described by Mohjan, H. K. (2018) is largely inductive and open in nature, and it was described as an effective model that occurs in a natural setting and enables the researcher to develop a level of detail from high involvement in the actual experiences. In addition to that, the qualitative research approach defined by Creswell (2014), as an approach for exploring and understanding the meaning individuals or groups ascribe to a social or human problem. While the process of research involves emerging questions and procedures.

In this study, the semi-structured interviews were conducted to solicit information from three stakeholder groups, namely government, academia and business. Among the most important justifications of using semi-structured interviews report is that semi-structured interviews are commonly used in qualitative research (Collis & Hussey, 2003); Saunders et al., 2012)). The semi-structured interview subsequently uses open-ended and probing questions to allow the respondents to express their experiences in depth, while providing enough guidance and structure to ensure that the discussion remains focused on the researcher's topic of interest.

3.2 Population and sampling strategy

The population of this study composed of three parts, the government institutions concerned with women employment, academia, and businesses. A round 40 participants have been selected purposively to represent the population of the study.

Smith et al. (2009: 48) stress that, "*Sampling must be theoretically consistent with the qualitative paradigm in general, and with interpretative analysis particular*". The purpose of sampling is to obtain deeper insights and better understanding of some cases and events, as illustrated by Neuman, (2019) and, for this reason, purposive sampling was the strategy adopted in this study where, as Neuman (2019:222) indicates, "*Purposive sampling occurs when a researcher wants to identify particular types of cases for in-depth investigation to gain a deeper understanding of types*".

Sampling strategy is informed by structuration theory, which describes that social structures interacting with women (agents) for their selection, recruitment, and training in digital technologies. As this study, intends to explore the perceptions of participants who are directly involved in the employment, provision of knowledge and training to women in Saudi Arabia, therefore, purposive sampling technique is found to be the most suitable to select the participants. Moreover, the purposive sample technique is used for recruitment of samples from the relevant organizations in this study, which enabled me to target the participants in condition to meet the following criteria:

- The participants representative of academic, government and business groups must hold decision-making positions within organizations, such as recruitment of employees, and digitalization of operations.
- Participating social structures should be involved in making regulations and national policies regarding equal education, training and employment opportunities, and digitalization of society and economy. This criterion only applies to selection of participants from the government group.
- The participating organizations which have already started to implement the digitalization of their organizational functions before the data collection phase of this study.
- The participants from social structures with documented training programs for employees in digital technologies within last two years.
- The business start-ups purely established and run by women through working with digital technologies.

Participants representing the academic, business and government groups should have 5 years experiences in planning and implementing the digital technologies in the business operations of their respective organizations during their careers.

The selection of the appropriate number of interviewees is hence subjective. Healy, & Perry (2000) suggests that 30-35 are required for conducting a qualitative research at the doctorate level, whereas Bauer and Gaskell (2000) suggest between 10-15 participants, arguing that the main concern is the quality of the information rather than the number of the respondents. Patton (2002:244), meanwhile, asserts that the sample size in qualitative research does not rely on a specific number of interviews, but on several factors which

are "*what you want to know, the purpose of the inquiry, what's at stake, what will be useful, what will have credibility, and what can be done with available resources*".

Thus, the sample size of participants as described above, is illustrated as in table 1.1.

Table 1.1: Participants in semi-structured interviews in Saudi Arabia

Stakeholder	Female	Male	Total
Government	6	4	10
Academia	13	2	15
Business	9	6	15
Total	28 (70%)	12 (30%)	40

3.3 Method of data collection

The semi-structured interviews were used as data collection tool, which fits well into the qualitative research approach adopted by this study. According to Smith (2007), the interview method is an appropriate data collection technique for use with an interpretive paradigm. Interviews help researchers understand the feelings and thoughts of people expressed through speech and body language, enabling them to answer the questions in a natural way (Hussey & Hussey, 1997). Collis and Hussey (2009), Creswell (2007) and Patton (2002) also emphasize that interviews are a strong tool to understand human experience.

Moreover, interviews help researchers to obtain more and deeper viewpoints from respondents (Robson, 2002). Thus, for the purposes in this study, the interview method was selected as an effective way to gather data, first and foremost because the interviewees can be specifically targeted to ensure that they are knowledgeable about their roles in the areas to be explored.

The interviews were conducted in Saudi Arabia during a period of three months from 26th August 2015 to 26th November 2015. There were forty participants comprising 12 Saudi men and 28 Saudi women (see table 1.1). I arranged the appointments for the interviews in several ways; for instance, social media (Twitter), the telephone and the mail used to arrange appointments. In many cases, the interviews were held at the workplace of the participants.

3.4 Construct validity

Validity is considered to be an important criterion to increase accuracy and truthfulness of the qualitative data, which is used to verify the accuracy of information derived from the qualitative data collection instrument (Creswell and Clark, 2010). As this research work to elicits the experiences and opinions about the obstacles of women employment in digital technologies age, which means that data derived from participants reflect the subjective realities expressed by interviews. The subjective realities can be verified only through the participants who expressed them during data collection, which warrants the use of internal validity for ensuring the accuracy of data and interpretation of data by the researchers by asking participants about whether outcomes presented in the study are reflection of their experiences. I adopted the member-check approach for confirming of

whether outcomes of this study are in line with what they have reported during interviews.

3.5 Data analysis preparation

Data analysis phase comprised of two steps: preparation of data for analysis and implementation of data analysis tool. These steps are elaborated in the subsequent subsections.

Preparation for the data analysis requires several steps: recording, transcription, translation and validation of the recording, transcription and translation. These steps are explained below.

Recording is the first step in preparing the interview data for analysis. Smith and

Osborn (2008) highlight that in qualitative research it is better to rely on recording than using notes. In this study, I had originally intended to use a voice recorder for the interviews, but only nine female participants and five males agreed to this, with the others preferring not to be recorded for their own reasons. In those cases where participants did not agree to recording, I had to rely on notes carefully written during the interviews to document the conversation as accurately as possible.

3.6 Ethical considerations

Many authors emphasize the importance of ethical principles when conducting research (Creswell, 2007; Patton, 2002; Schneider et al., 2003) and it is widely accepted that a variety of ethical and legal issues must be considered before commencing research that includes human subjects (Schneider et al., 2003).

Research ethics refers "*to questions about how we formulate and clarify our research topic, design our research and gain access, collect data, process and store our data, analyse data and write-up our research findings in a moral and responsible way*" (Saunders et al., 2009: 184). The ethical issues involved in data collection, methodology and research design should hence be considered at the beginning of the research process (Collis & Hussey, 2003; Oliver, 2012). Moreover, they must be respected during and after the research process.

4. Analysis and Discussion of results

The objective here was to obtain individual insights, opinions and perspectives within each group to determine what, if any, differences exist between the various positions and viewpoints of these three sets of stakeholders in relation to the obstacles facing employment opportunities for Saudi women arising from digitalization of economy.

Although the employment opportunities were found to be in different areas of digitalized market, in Saudi Arabia context and in the form of training and skills development programs, which can enable women to successfully take up employment opportunities in the labour market. The question is whether women are still able to take up the employment opportunities because of digitalization of Saudi economy. This section presents the outcomes of data analysis, and discussion in relation to obstacles as

perceived by participants in the way of women's pursuance of careers in digital technologies. Then the researcher will make a thorough discussion of the findings.

The discussion of results in this section will take into consideration some important obstacles arising from the socio-cultural constrains influencing on women's ability to take up potential employment opportunities due to digitalization of Saudi economy. Among the most important obstacles investigated include the dominate role of men, family support, while other factors consist of insufficient experience and training in digital technology, childcare system in KSA, and inadequate level of systems support for women employment. The questions related to the previous factors addressed to participants of the study to solicit information regarding the main obstacles facing women employment in the digital economy of Saudi Arabia. Therefore, in the following I will investigate the participants' perceptions, experiences, regarding these obstacles.

4.1 Domination role of men

This factor is one of the socio-cultural factors that obstruct women employment that addressed to participants selected from the three groups (government institutions, business, and academia). The first question asked to participants in regards to gender segregation in education. The results found that, most participants confirmed that men have better opportunities for studying certain technology subjects. The most important of these subjects sciences, technology, and engineering. The dominant of men in these subjects is mainly related to the skills and competencies gaps between men and women in digital technologies in the given Saudi context. On other words some related the domination of men over women to sociocultural view that, the dominant role of men emerges from the socio-cultural beliefs regarding the women's role in the household activities, while the men's role as bread-earners for the families.

One of the participants reported that, "*males enjoy many more career opportunities than females, such as the military sector, aviation, forensics, genetic engineering, the technological sector, and power generation*". Another, interviewee provide a different views considered as a psychological critique of women in Saudi Arabia. As argued that, the personality weaknesses and a refusal to change could be major factors affecting women's ability to pursue the digital careers in digital technologies. In addition to that, among the most important reasons for women to not dominate in digital opportunities, that is report by one of the respondent as he says "*once a woman is married, her life devoted to pregnancy, birth and raising children. Also, half of the men do not want their wives to work in mixed places such as telecommunications companies, banks. They do not want their wife to work as physicians, nurses or pharmacists, so she may only work as a teacher. Women face obstacles because of their vulnerability. Some of them do not have strong personalities, and some others are against change*." Another reason reported by one participant when arguing that, there is a significant number of Saudi men believed that wives should stay at home and certainly not work in a mixed environment, such as banks and telecommunication companies, or even in the health sector. In fact, they prefer women's work to be limited to a specific field – namely, teaching.

Thus, the above views in regard to sociocultural factors that impede Saudi women to participate in the labor market are in match with various findings reported by many researchers. Among them Gil et al. (2010), as they wrote that, there are four key factors, which serve as key social/maternal barriers to the access to and the purposeful use of the digital technologies, the most important of these factors is the social norms favoring men. In the same way a study conducted (Hafkin 2005) identified the 'collateral cultural factors' as among the main factors obstructing Saudi women to access career opportunities in the digital age. Furthermore, (Elamin & Omair, 2010) conceived that, the customs and social-cultural trends that continue today can be presented to reduce the level of participation of Saudi women in the development of their country alongside men.

Another view reported by one of the interviewees, which is considered not supportive to women work, as reporting that, Women can work but their work should be restricted to the home. For example, they can do household duties and if they are free, then they can also do some online businesses, which is in accordance of our social values. This comment indicates and shows the Saudi men's mentality about the women's status as a housewife. Unfortunately, this traditional viewpoint is still quite widely held within Saudi society. This means that men in Saudi Arabia wants to keep control over the activities of women, which is a reflection of male hegemony in the society, and represents a form of violence against the women. Hence, the previous arguments agreed with the conclusion derived by Alhareth et al. (2013) as they recognized that there are two competing values in Saudi society: keeping up with the technology revolution while at the same time preserving religious beliefs and cultural values.

4.2 Lack of family support

When participants of the current study were interviewed to understand their perceptions in regard to family support for the women to take a career responsibility in digital age. The results showed that, many participants perceived that families in many cases are not supportive of their daughters to work in the public and private sectors due to mixed gender environment at workplaces using digital technologies for operations. One of the participants view that,

> *"The family, including husband, brothers and parents. They do not support their daughters."*

Another participant reported by saying that,

> *"The issue with married women, even they talent, is that their husbands and families stand on husband side are reluctant to allow them to work in digitalized workplaces due to men working along with women*"

A practical example regarding the family support for women in Saudi society was reported by one of the participants who has a company employing Saudi women. As reported that when a female applicant came with her father looking for a job in his

company, her father answered questions on her behalf and selected the working hours and the specific job for her. It seems that paternal control is part of the cultural background, customs and social tradition in Saudi Arabia. Some females cannot discuss their future career without male approval either a father, brother or husband.

The previous case shows that, families still control the working life of their daughters. It was pointed out that some parents prefer girls to teach rather than work in any job related to technology because the latter might involve a mixed environment. The upshot is that girls most commonly choose education as their subject of study at university.

Another women confirmed that, there was no support from her family after the death of her father and explained how her brothers controlled her decisions, as she reported that,

> *"My family does not support me; my father died and I have brothers. I should refer to them in everything that I do. My family does not encourage me. When I ask their opinion on anything, they usually answer with: "Do whatever you want to do", and when I decide to do anything, they ask me why! They make me hesitate towards doing anything."*

Therefore, the above example is typical of what can happen in some Saudi families. When the father passes away, his eldest son assumes control and applies his values to his sisters. Another experience shown by other women interviewed, proved a very good example, for she has been strong woman who seemed to have improved herself despite the lack of help from her family. In another case, who struggled with her family situation but still managed to save money so that she could take computer courses without any support from her family.

Thus, the previous analysis concentrates and illustrate on the family control on their daughters work whether in the private or public sector or others who refuse them to join any work. The findings so far were in match with various outcomes of research issues in the field. Among these research that conducted by Elamin and Omair (2010) in which they confirmed that, the socio-cultural factors encourage male domination in most jobs and inhibit Saudi females from working, with the exception only of those sectors purported to be suitable for women, such as social work, healthcare and education. Furthermore, it is recognized that, one consequence of male societal domination in Saudi Arabia is the negative effect it has on working women (Yusuf et al., 2015). This mean that one reason for male dominance is family roles. In line with that, a study conducted by Metcalfe (2008) stresses that the family structure has made men more dominant in the work-place, in addition to that, he illustrates that, women's situation in the Middle East is defined by the societal view that, "*women's most important role, according to society, is a homemaker and mother*."

Recently, the business sector, especially business incubators, has started to support and encourage many projects and potential innovations. Hence, one of the woman

interviewed highlighted that career opportunities are actually open for women, but they continue to face some challenges from society and family, as she reported that:

> *"Women face challenges, such as society and family. If we speak about education and government, both encourage girls by giving them a monthly bonus during study and distinction bonuses for outstanding female students. Society and the environment (family) are responsible for the default that makes [a woman] make progress or stop. Women have a great power to develop, progress, and succeed in many fields."*

On the other hand, there are various women participants of the study, confirmed that their families encouraged them in the field of technology, such as computer engineering, attending the right courses and dealing with the practical applications of IT devices. Thus, we conclude that, although families have an influential role in the development of girls in Saudi culture, many families remain conservative and closed-minded. However, I saw conversely that some Saudi women are supported by their families and encouraged in their ambition to study and work in the field of technology.

In regard to the concluded trends about the importance of family support, there are various studies conducted to examine the women need of support of her family. Abalkhail and Allan (2015) stressed that in terms of career advancement in Arab societies, women still need some assistance from their family to reach senior positions. More specifically, Welsh et al. (2014) argue that male family members in Saudi Arabia (husbands, fathers or brothers) are supposed to offer some support to the females amongst them. Furthermore, Nasseef (2015) in his study, confirmed that for Saudi families to support their daughters in education, and to varying degrees in employment, although some encourage them to continue their education rather than look for a job. Nevertheless, some mothers still prefer to prepare their daughters for the future by encouraging them in traditional household tasks, rather than participation in personal and academic development.

4.3 Insufficiency of experience and training in digital technologies

Many interviewees argued that the curriculum does not comply with the needs of the labour market as there is a big gap between education and employment needs. Most of them were critical of the education system in KSA, meaning that, the education system outcomes do not fit with labour market demands.

Moreover, there is a widely held belief that women are neither interested in nor equipped for the technology field, as evidenced by the low rate of women in science and technologies-related education and senior positions in the technology sector worldwide. This view so far in agreement with a comment of one of the female interviewee, as she cited two additional factors impeding women's progression in the workplace. Here she emphasized both the reluctance of employers to employ women to work in IT and the corresponding limits that exist in many women's education. Another respondent has a view that, men can pursue studies in a wider range of subjects, giving them a career

advantage over their female peers; for example, IT engineering careers are only currently available to men in Saudi Arabia.

Another interviewee comment as follows:

> *"The communication channels between female universities and business firms are not strong as that of the male universities, which is a big hurdle in giving women hands-on training to female students at firms in digital technologies.*

Thus, we conclude from the previous views that, men seem to have better employment opportunities in digital technologies in science and technological sectors compared to females with lower level of skills and competencies. *While another interviewee* attributes the lower level of women's digital skills due to lower level of internships opportunities available for female students studying science and technological fields in the firms using the state-of-the-art digital technologies. In addition to that, one of the participants cited that there is less communication between female educational institutions and the firms. In contrast to male leaderships, the females are unable to set up regular contacts with the firms using the digital technologies for arranging the internships for women aspiring to pursue careers in digital technologies. Therefore, this leads to the skills and experience gap between theoretical and practical domains of knowledge, which can be a hurdle for women intending to pursue careers in digital technologies.

Another factor that, contribute in less employment opportunities for women in Saudi Arabia in the digital technologies, as asserted by one of the participants is that, women's education is unequal to that of men, which is one of the main reasons for women lagging behind men in finding the employment opportunities resulting from the digital technologies. Males have more opportunities in most fields, while there are limited disciplines for women, such as their exclusion from the domains of computer and software engineering fields.

> *"The curriculum is different between genders. Engineering and programming are very limited for women".*

Furthermore, there are many participants from the government and academia groups seem to favour the theme of the lack of training and practical sessions during studies could be an important reason behind the lower employment level for the female students compared to the male students. In their view, many subjects in the science and engineering disciplines are not available to female students.

Many interviewees argued that, one of the reasons that obstruct Saudi women to study computer sciences and other technology discipline is the lack of qualified and experienced female teachers. One of the females interviewed comment as follows:

"The reason of less focus on the practical part of the course work is partially related to the lack of the female qualified trainers and teachers for showing digital technologies in action at workplaces and educational institutions"

Therefore, the female trainers are required to train female students in female universities, suitable arrangements for training and providing the female staff can be a suitable approach, but this again depends on the government support and cooperation from the business firms to arrange the training opportunities. Thus, intensive training programs are required for training and supplying female demonstrators for fulfilling the students' training and skills development needs for women aspiring to pursue careers in digital technologies. Hence, training female staff to deliver the contents of the curricula in the practical way is a key solution for proving the students with digital competencies in science and technologies.

In the same way, another factor related to training is the vocational training for females which is not widely available for women in science and technologies-related areas, as one of the male interviewed comment that,

"Honestly, mostly held belief is that women do not fit with vocational training, and this is appropriate for men, which is why there is a smaller number of vocational training institutions for women compared to ones for men throughout the country."

Hence, as investigated we conclude that, the lack of digital skills is a big reason which stops women from entering into jobs demanding the digital skills, and is a factor behind women taking up non-digital technologies-related roles. The means the lack of digital skills becomes a threat to women trying to find work in health and education sectors, which are rapidly being digitalized.

4.4 Childcare system in the KSA

Childcare system in KSA is considered as one of the fundamental constraints that, stopped women from securing jobs in labour market. Almost interviewees emphasizes that the childcare system is a problem for women work. It is believed the advantages of childcare are self-evident, enabling the mother to provide care for her child at certain times and thereby permitting her to keep her job. However, the problem of inadequate facilities is a concrete obstacle to women's employment, particularly in the cases, where there are no nurseries close to where the mothers work. To support this view one participant comment that:

"Child care services: There is no serious approach regarding changing women's work environment through adding a nursery section in a special section for children, close to the workplace. All nurseries are separate places and far from parents."

The problem of childcare can be resolved by finding nurseries for mothers in their work environment to be confident that their children will be safe and secure. Whereas in

my view the solution requires a big push from the government side, the business institutions, and the official government institutions in concern with women employment.

4.5 Inadequate level of system's support for women's employment

In this section, the analyses concentrate on the system of support for women's employment, which involved the business organizations, academia and the government. The participants provide their opinion in regard to this issue. Almost respondents think that, if Saudi society is slow to adapt, then the policy of the government is also limited in terms of employment opportunities for women. One of the female participant comments that:

> *"I can see the government is sincere in its efforts to increase the employment opportunities for women and made many policies in this regard to support the education of women in digital technologies, and involved employers to introduce training of women. However, polices are not mature enough to produce any positive impact on the women's employment".*

Two major aspects can be stem from the above comment. That is the first one is formulation of policies for educational institutions in terms of developing curricula for educating and training women in digital technologies, so that they can play a positive role in building the national economy. Second aspect is related to the involvement of employers in the training the existing women employees and potential women employees (students) to educate and train them in using the digital technologies productively.

Furthermore, one of the participants, in regard to policies to develop education for women and training them, comment that:

> *"Though some policies for women training and education for using the digital technologies are there and some are under progress, but all legislation whether for education at the educational institutions or training at the workplaces are limited to the paper, and implementation is not even across all organizations and women groups with different level of qualifications in digital technologies*

The above comment indicates that, the government has formed the legislations regarding the preparation of women to pursue digital careers in digital technologies through the placement programs in the educational institutions and workplaces, but they are not followed up regularly, and there is no mechanism to implement the all legislations regarding training women to pursue careers successfully.

In line with the previous comments one participant from government group referred and comment as follows:

"One should bear in mind that we are moving from conservative society to the liberal society, and we aim to increase the women empowerment as part of liberalization process. The spaces and infrastructure may take some long to be developed and implemented, which ultimately will give more opportunities to women for getting and education and training in digital technologies"

From the above comments, we conclude that, the respondents confirmed and hope that the efforts for increasing women employment through giving them access to the education and training. The major obstacle, described by above participant, is the lack of fully developed infrastructure to support the training and education of women in order to improve the digital competencies.

On the other hand, some participants from Business group referred to another problem in regard to the cost of building infrastructure for female trainer as an obstacle in the way of improving digital skills of female workers. The one comment that:

"Building spaces for training of women workers, hiring experienced trainers and compliance with social customs regarding protection of women are the main barriers which prevent the business to launch the full-scale training programs for female staff in using the digital technologies."

Based on the above comment, it might be concluded that, there is a common belief that women should not be allowed to mix with men folks at the workplaces and educational institutions. The society as a whole believed in educating women, which is evident from the separate educational institutions for women, however, there was not widespread support for women employment in Saudi society, which led to the male workers dominate the workplaces. In the last two decades, the movement of women's empowerment and emancipation started, which caused the government to do legislation regarding the permission of women to work in government and private organizations.

Moving forward to understand system support for women employed in the private or government institutions, most female employed face the problem of facilities of transportation, as expressed by many females. One of the female comments that:

"My employer does not offer me any pick-and-drop facility, and travelling allowance is not available as well. This increases burden on my family to drop me at workplaces, which is not positive condition favoring my long-term employment goals".

Hence, the above comment indicates that, women need to travel on public transport to get to the workplaces or depends on their male family members to drop them at the workplaces. In addition to that, other female respondents talked about the deduction of salaries by employers just because they arrange private drivers for give them pick-and-drop services. In regard to this issue one of the female participants comment that:

"Indeed, the main disadvantage of working in the private sector is low wages. Hence, female employees feel that it is unfair that men and women have a similar transportation allowance because men use their own cars while women must pay around 50% of their monthly wage to hire a private driver".

Therefore, the absence of the travelling allowances or free pick-and-drop services for female workers can hamper their abilities to take up or continue with the employment opportunities resulting from the digital technologies.

The other problem that discussed in detail by participants as one of the problems facing women employees in Saudi Arabia is the suitable working conditions. There are no regulated policies about flexibility of work conditions for women. One the male participants from business group comment that:

"Currently, there is no such policies to support the flexibility of women's working conditions, which might be the reason that we do not receive so much female applicants at the recruitment stage".

There are many participants in particularly from business group or academia groups provide similar feedback about the creation of flexible working conditions at the policy-level. One participant from government group comment that:

"Though, currently we are lacking in the flexible digitalized operations to allow women for working flexibly, but we are still working to digitalize our operations to consider the flexible working conditions for women".

Similar comments from the academic group, though situation with academic institutions seems to be better, but there are still insufficient digital structures to support flexible working conditions for all female worker across all disciplines. One of the participants from the academic group comment that,

"There are applications of educational technologies, which are used in some departments in universities such as online support provided by female staff to the students from their homes, but this is not the case with all departments, and all subject areas".

Nevertheless, if the flexible working conditions were not provided by the organizations (academic, business, government), then it can pose a serious issue for women pursuing careers in digital technologies to continue with or look for job opportunities created by digital technologies.

Furthermore, taking the perceptions from the governmental bodies, it was learnt that government has passed some legislations regarding the flexible working conditions at workplaces in both public and private sectors; however, implementation of the legislations is yet to be done. One participant from government group comment that:

> *"The government is actively working to increase the women share in the employment; some legislation has been done regarding introducing the transportation allowance for female workers, and allowing some part of work to be done at home for women using the digital technologies. However, there is no monitoring mechanism to track the implementation of such legislations."*

To conclude that, the government commitment to increase the share of women at workplaces is clear. The government supports for the transportation allowance to facilitate the travelling of women within safe environment and affirmation on the introduction of flexible working conditions speak of the positive measure to increase women's participation in the labour market. However, without the support or implementation mechanisms, there will be limited overall impact of government-sponsored policies regarding the support to women's employment in the labour market, which means that non-flexible working conditions and absence of transport allowance for women workers is still a barrier for participation in the labour market. Moreover, it could be concluded that the patriarchal, conservative structure of Saudi society still has an over-whelming influence on male-female employment inequality despite the efforts of the government to introduce change into the business world.

5. Implications and Conclusion

Any community worldwide, in particularly in the digital technology age can't ignore the women role in our daily life. Therefore, women employment has become very necessary to contribute in economic development to their societies. In this study, the obstacles facing women employment in Saudi Arabia context is crucially to be resolved through providing various practical mechanisms including raising the community and families' awareness, issuing government regulations, and the commitment of businesses, as well as the academia. Hence, women employment can be of added-value to their community, in condition that, they will be well educated, trained in the digital technologies, and supported. The results of the study found that, there are many obstacles facing women employment. Among them the social-cultural constraints such as the dominate role of men, and lack of family support. In addition to that, insufficiency of experiences and training in digital technologies is due to the unfit of educational system outcomes with the labour market demands. This trend is basically, the responsibility of solid government legislation to regulate and support the higher education system, and encouragement of the academic institutions to play their role effectively to educate and train the Saudi women in digital technologies. However, the businesses have a special role to make employment opportunities and providing them with professional training sessions in order to do their jobs successfully. Another issue that found and need more pace of discussion is the childcare system in KSA, which is considered as one of the barriers to Saudi women to keep on her job. So, there is a need to establish nursery sections at women workplaces to enable them to be confident of their children safety.

5.1 Imitation of the study

There were a number of limitations faced in this study. These limitations are clearly observed, and one of the most crucial limitations is the sample size, which is generally facing almost researchers. Due to the nature of the study, the researcher only depends on the qualitative approach, which in this case cannot enable the researcher to employ quantitative approach. Therefore, the study only solicits information from a round 40 interviewees to participate in the study. Many interviewees, who agree to participate in the study, change their views, which disturb the researcher program of conducting interviews. In addition to that, time constrain is another limitation of the study as the researcher has to conduct the interviews in different cities and different location due to the sample structure which composed of three different groups (government institutions, academia, and businesses).

5.2 Future scope

Several studies have been conducted in regard to women employment in Saudi Arabia, but almost of these studies do not concentrate on women employment in the digital technology age. Meaning that, the studies just argued the factors that constraint women employment such as socio-cultural factors, including dominate role of men, lack of family support, society values, and others. Therefore, there is a need to research obstacles of women employment focusing on recent trends that emerged as a result of digital transformation and its influence on the economy, and business.

Conflict of Interest Statement

The author declares no conflicts of interests.

About the Author

Nailah Hassan Gadi is researcher in Human Resources Management at Hull University. She belongs to Taif University in Saudi Arabia.

References

Al-Alhareth, Yahya, Al-alhareth Yasra, and Al-Dighrir (2015). Review of Women and Society in Saudi Arabia, American Journal of Educational Research, 2015,Vol.3, No.2 121-125.

Antonio, A., & Tuffley, D. (2014). The gender digital divide in developing countries. *Future Internet*, *6*(4), 673-687.

Al-Asfour, A., & Khan, S. A. (2014). Workforce localization in the Kingdom of Saudi Arabia: issues and challenges. *Human Resource Development International*, *17*(2), 243-253.

Al-Asfour, A., Tlaiss, H. A., Khan, S. A., & James, R. (2017). Saudi women's work challenges and barriers to career advancement. Career Development International, 22, 184–99.

Alina Sorgner, Eckhardt Bode, Christiane Krieger-Boden (2017). The effects of digitalization on gender equality in the G20 economies, Kiel Institute for the World Economy, Kiellinie 66, 24105 Kiel, Germany.

Binsahl, Haifa, M., Chang, S., and Bosua, R. (2015). Exploring the factors that impact on Saudi Female International Students use of social technologies as an Information source. AIS e Library.

Boden, C. R., & Sorgner, A. (2018). Labour Market Opportunities for Women in the Digital age, The open –Access, Open Assessment e-Journal, Vol. 12, 2018-28 | May 08, 2018 | http://dx.doi.org/10.5018/economics-ejournal.ja.2018-28

Bauer, M. W. and Gaskell, G. (2000). Qualitative Researching with text, image and sound, London, Sage, 19-37.

Collis, J. and Hussey, R. (2003). Business Research: A Practical Guide for Undergraduate and Postgraduate Students, Palgrave Macmillan, Houndmills, Basingstoke, Hampshire

Creswell, John W. (2014). Research design, qualitative, quantitative, and mixed methods approaches, United States, SAGE Publications, Inc.

Creswell, John W. (2007). Five Qualitative Approaches to Inquiry, Sage Publication.

Davaki, K. (2018). The underlying causes of the digital gender gap and possible solutions for enhanced digital inclusion of women and girls. FEMM: Women's Rights and Gender Equality.

Frey, Carl, B, & Osborne, Micheal, A. (2017). The Future of Employment: How Susceptible are Jobs to Computerisation? Technological Forecasting and Social change, 2017, Vol.114, issue C, 254-280.

Hafkin, N. (2002). Gender issues in ICT policy in developing countries: An overview. Paper presented at the UN Division for the Advancement of Women Expert Group Meeting on Information and Communication Technologies and Their Impact on and Use as an Instrument for the Advancement and Empowerment of Women, Seoul, Republic of Korea, 11-14 November 2002. Available at: http://www.un.org/womenwatch/daw/egm/ict2002/reports/Paper-NHafkin.pdf.

Healy, M and Perry, C. (2000). Comprehensive criteria to judge the validity and reliability of qualitative research within the realism paradigm, *Qualitative Market Research – an International Journal*, volume 3, number 3, pp. 118-126.

Gill, K.; Brooks, K.; McDougall, I.; Patel, P.; Kes, A. (2010). Bridging the Gender Divide: How Technology Can Advance Women Economically; International Centre for Research on Women: Washington, DC, USA, 2010.

Iglesias-Fernández, C., Llorente-Heras, R., & Dueñas-Fernández, D. (2010). ICT employment, Over-education and gender in Spain. Do information and communication technologies improve the female labour situation?. New Technology, Work and Employment, 25(3), 238-252.

Matt, C.; Hess, T.; Benlian, A. (2015). Digital Transformation Strategies, Business and Information Systems Engineering, 57(5), 339–343, available at: http://link.springer.com/article/10.1007/s12599-015-0401-5.

Metcalfe, B. D. (2011). Women, empowerment and development in Arab Gulf States: A critical appraisal of governance, culture and national human resource development (HRD) frameworks. *Human Resource Development International*, *14*(2), 131-148.

Mohajan, Haradhan (2017). Research Methodology, Munich Personal RePEc Archive. Available at: Online at https://mpra.ub.uni-muenchen.de/83457/

MPRA Paper No. 83457, posted 28 Dec 2017 07:25 UTC

Nasseef, K. A. (2015). Women's Empowerment Strategies in NGOs in the city of Jeddah, Saudi Arabia-Exploring the Complexity and Challenges of the Cultural Context, the University of Leads, School of Sociology and Social Policy.

Nakafeero, A., Okello, D., Comfort, K., Mandlate, J., Kyomuhendo, G. B., Yitamben, G., ... & Bakesha, S. (2013). African women and ICTs: Investigating technology, gender and empowerment. Zed Books Ltd.

Neuman, W. Lawrence (2019). Social Research Methods: Qualitative and Quantitative Approaches, seventh edition, Pearson Education Limited,

Nikulin, Dagmara (2016). The Impact of ICTs on Women Economic Empowerment, Gdansk University of Technology, Faculty of Management and Economics,

OECD (2018), Empowering Women in the Digital Age, where do we stand? High-Level Event, at the margin of 62nd session of the UN Commission on the status of women, 14 March 2018, New York City, United States.

Olatokun, W. M. (2009). Analysing Socio-Demographic Differences in Access and Use of ICTs in Nigeria Using the Capability Approach. Issues in Informing Science and Information Technology 6.

Oliver, Paul (2003). The student's guide to research ethics, Open University Press McGraw-Hill Education McGraw-Hill House, Berkshire, England.

Prasad, P. N., & Sreedevi, V. (2007). Economic Empowerment of Women through Information Technology:

Patton M. Q. (2002). Qualitative research and evaluation methods. 3rd Sage Publications; Thousand Oaks, CA.

Pérez P. M., Martínez S. A., de Luis C. P., & José V. J. M. (2004). A technology acceptance model of innovation adoption: the case of teleworking. European Journal of Innovation Management, 7(4), 280-291.

Raja, S., I., S., Kelly, T., Narimatsu, J., & Paradi, G, C. (2013). Connecting to work: How information and communication technologies could help expand employment opportunities.

Rajkhan, Safaa (2014). Women in Saudi Arabia, Status, Rights, and Limitations, University of Washington Bothell, School of Interdisciplinary, Arts and Sciences. A paper submitted to the faculty of the University of Washington Bothell in candidacy for the degree of Master of Arts in Policy Studies.

Reis J., A. M., Melao, N., and Matos, P. (2018). Digital Transformation: A literature Review and Guidelines for Future Research, Springer International Publishing, AG, part of springer Nature, 2018.

Rashad, M. and Kalin, S. (2019). Saudi Arabia lifts travel restrictions on women, grants them greater control. Available at https://www.reuters.com/article/us-saudi-women/saudi-arabia-lifts-travel-restrictions-on-women-grants-them-greater-control-idUSKCN1UR5TB [Accessed on 20 November 2019].

Robson, Colin (2002). Real World Research, A research for Social Scientists and Practitioners- Researchers 2nd edition, London, Blackwell.

Smith, J. A., Flowers, P., & Larkin, M. (2009). Interpretative phenomenological analysis: Theory, method and research. London: Sage

Saunders, M., Lewis, P. and Thornhill, A. (2012). Research Methods for Business Students. Pearson Education Ltd., Harlow.

Suliman A. AL, Nisar A. N. (2012). Impact of Information Technology on Employment of Women in Saudi Arabia, Journal of Theoretical and Applied Information Technology, Vol. 40, No. 2.

Yhlas Sovbetov (2018). Impact of Digital Economy on Female Employment: Evidence from Turkey, International Economic Journal, DOI: 10.1080/10168737.2018.1478868. available at: https://doi.org/10.1080/10168737.2018.1478868.