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Social capital in a digital age: greater access to networks for female entrepreneurs

A research report submitted to the Faculty of Commerce, Law and Management, University of the Witwatersrand, in partial fulfilment of the requirements for the degree of Master of Management in Entrepreneurship and New Venture Creation

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Date 31 May 2019

ABSTRACT

Orientation – It has been suggested that female entrepreneurs are critical to economic growth, yet fail to develop strategic networks to gain access to embedded social capital resources required to provide a competitive edge in business. The difference between male and female social networks is key issue affecting financial resources and ultimately firm performance

Motivation for the study – The digital era has created uncertainty by transforming and disrupting the entrepreneurial process, digital technologies allow entrepreneurs to pursue entrepreneurial activities in new ways. This study examines the use of digital technologies to gain social capital resources.

Research purpose – The purpose of this study is to examine social capital in the digital age. The manifestation of social capital on online platforms and technologies by female entrepreneurs and access gained to embedded resources necessary to enhance firm performance of women owned firms.

Research design, approach and method – Insight was derived through a quantitative study. A survey was administered to owners and founders, a total of 93 female entrepreneurs or female entrepreneurs partnering with males operating in various industries in South Africa participated.

Main findings – Aspects examined include bonding and bridging social capital; offline networks; and digital platforms and technologies. The results indicate that female entrepreneurs are using digital platforms and technologies to pursue entrepreneurial activities, needed to promote firm growth.

Practical/managerial implications – There is an increasing use of social media, digital platforms and digital technologies. The traditional way of pursuing entrepreneurial opportunities will fundamentally change and will require entrepreneurs find new ways of doing business in the digital era therefore removing some barrier experienced by female entrepreneurs.

Contribution/value-add – In exploring social capital and issues experienced by female entrepreneurs in a developing country, this study explores the impact of digitalisation to social capital theory and female entrepreneurship adding to both literature.

Key words: Female entrepreneurship, social capital, digital technologies, crowdfunding, social networks

DECLARATION

I, Phumzile Moetse, declare that this research report is my own work except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Management in the Field of Entrepreneurship at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

Phumzile Gugu Moetse

Signed at Wits Business School

On the …….. day of ……..…… 2018.

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CHAPTER 1: INTRODUCTION

1.1 Introduction

The resources embedded in the entrepreneur's social structures, networks and membership can contribute to the entrepreneurs' success (Baron & Markman, 2003, Arzlanian, Elfring & Stam, 2014; Venter, 2015). The ability of the entrepreneur to mobilise and access resources such as social, financial and human capital is crucial to the development and survival of the new business venture (Shaw & Stringfellow, 2009; Cooper, Hampton, & McGowan, 2011). Female entrepreneurs in developing countries like Africa and the Middle East experience challenges associated with access to financial resources and non – financial resources, attributing the challenges to the lack of certain skills and expertise in specific business matters (Kalyani & Kumar, 2011). The participation of female entrepreneurs remains untapped as they encounter barrier, further creating a significant and systematic gap in the firm performance of female and male entrepreneurial ventures (Dautzenberg, 2012; Robb & Watson, 2012). As more women move towards non-traditional sectors such as technology, manufacturing, communication and transportation, female entrepreneurs strategically choose a male to partner up with in order to increase the likelihood of acquiring financial resources and legitimacy (Costin, 2012; Dautzenberg, 2012). Female entrepreneurs are mired with challenges such as limited work experience, mentors investors and access to financial resources required for optimal firm growth (Reichard & Sweida, 2013). There is a significant gender gap especially in developing countries; possible reasons include the difference in social networks between male and female entrepreneurs (Grant & Klyver, 2010). Developing social networks still remains as a common barrier among female entrepreneurs, resulted in poor business networks and social assets necessary to access financial resources (Kalyani & Kumar 2011; Kaciak, Shamah, & Welsh, 2018). There is consensus that the degree of support that female entrepreneurs obtain from their networks differ compared to their male counterparts (Rooks & Solano, 2018).There is considerable research focusing on accessing or (a lack of) differences in males'

and females' social capital essential for increased performance of new ventures (Yetim, 2008, Grant & Klver, 2012, Borgen et al, 2013; Bradley, Justo, & Milanov, 2015, Rooks & Solano, 2018).

Although work on female entrepreneurs' social capital has increased, not many studies have taken into account the impact of new digital technologies. The study aims to examine social capital of female entrepreneurs in light of technological developments. Web 2.0 technologies have created platforms that allow entrepreneurs to connect via the web to exploit opportunities in the market. Information and technology have reshaped and redefined all areas of our society. Digital technologies and the internet have an incredible impact on not only the lives of individuals, but on organisations as well (Ahituv & Hasgall, 2018). The introduction of digital platform is no exception; as it allows people to access and connect to a boundaryless world in order to share information and share business processes, no matter the location (Ngai, Moon, & Tao, 2015, p. 41). The use of digital technologies has fostered globalisation, allowing individuals to connect over a platform for both social and business purposes. These platforms are used for social interaction as well as for maintaining and growing professional networks (Song, 2015). Crowdfunding is a growing phenomenon that is regarded as a platform dependent on an online social community (Gerber, Hui, & Kuo, 2012). Crowdfunding is a novel method to finance entrepreneurial venture causing a potential disruption in micro financing and social networking, allowing the sharing of knowledge and business ideas (Li, Wu, Xu, & Zheng, 2014; Cordova, Dolci & Gianfrate, 2015). Online social networking platforms such as Facebook, Twitter, Linkedin have created other avenues for people to communicate, creating opportunities for entrepreneurs to engage on online social networking. Such platforms are utilised by entrepreneurial individuals and groups to seek advice, information and to access funding for their ventures. There is limited research on how female entrepreneurs in developing country are using digital platforms to gain financial capital and their success in leveraging these embedded resources. This paper intends to contribute by addressing this gap in literature.

Firstly, this paper contributes by discussing two important social capital concepts in term of online network, namely bonding social capital and bridging social capital. Secondly, how female entrepreneurs use crowdfunding platforms and social networking sites to build and exploit social capital. Thirdly, whether the entrepreneurs' online social capital is more beneficial in the digital era than offline social capital. Finally, whether the entrepreneurs' online social capital provides access to financial capital required to improve firm performance.. . The paper is organised is organised as follows, the presentation of the theoretical background, context of the study and then a review on literature to formulate hypotheses. This is followed by research methodology and a presentation of the data. The discussion section presents our main theoretical and empirical contributions followed by limitations of this study and a summary of future research directions

1.2 Theoretical background to the study

The entrepreneurial landscape is characterised by uncertainty and dynamic environmental factors that require the entrepreneur to recognise opportunity and exploit the opportunity (Davidson, Gustafsson, Mitchell, & Smith, 2005). Entrepreneurship and the process of starting a new venture is a crucial vehicle in any economy to achieve sustained economic development and employment generation (Bulsara, Gandhi, & Porey, 2009). Entrepreneurial activity is embedded in social relationships; these relationships consist of personal contacts, business contacts and other entrepreneurial networks that form social capital. Social capital refers to the social environment of the entrepreneur and the resources derived these networks (Yetim, 2008). Social networks are a set of relationships consisting of a mixture of personal networks and diverse networks. This paper will focus on two perspective of social capital namely bonding and bridging social capital, bonding refers to strong relationships between networks. Bridging social capital on the other hand are weak relationships characterised by women trying to create outgroup connections with a diverse network (Caetano, Kalbfleiisch, Neumeyer, & Santos, 2018). The gender difference in social capital and resources obtained from their networks remains a gap in literature. Social capital can enable and enhance the

entrepreneurial process, providing better condition for the entrepreneur to access resources (Camarero-Izquierdo, Gutierrez- Cillan, & Hernandez - Carrion, 2019).

Africa was reported to have the lowest innovation (20%) intensity compared to other economies, furthermore women are more likely to start a business out of necessity compared to men (Herrington, Kew, & Mwang, 2016-2017).This remains a high priority and agenda for policy makers and governments to increase participation of women in the economy. Women are less likely to operate in male oriented industries such as technology, manufacturing, communication and transportation which can be attributed to how women perceive themselves (Evald, Klyver, & Neilsen, 2013). The entrepreneurs' perceived opportunities, perceived capabilities and fear of failure all inform whether an individual will engage in entrepreneurial activity involving opportunity identification, firm growth and overall success (Haynie, Sheperd, Earley, & Mosakowski, 2010). Evald, Klyver andNielsen and Evald (2013) further highlight that women entrepreneurs' constantly struggle to perceive themselves as entrepreneurs as they lack the required skills and competences to become entrepreneurs.

A study was conducted by the World Bank with a special focus on female entrepreneurship in low income economies, "institutional factors, women's financial inclusion, the gender gap in education, and legal rights disparities" (Krylova, Meunier, & Ramalho, 2017, p. 1) were identified as barriers faced by female entrepreneurs. Female entrepreneurs in developing economies experience shortage of access to networks and necessary resources hence contributing to the high failure rate of female owned ventures in growth-oriented industries (Kaciak, Shamah, & Welsh, 2018; Lv & Xie, 2018). Female entrepreneurship is regarded as an important source of economic development; the inclusion of women in the economy can positively impact economic growth and development (Krylova, Meunier, & Ramalho, 2017).

It is evident that social capital enables entrepreneurs to identify new business opportunities, access to both financial and non-financial resources and to gain legitimacy (Arzlanian, Elfring & Stam, 2014).. The lack of access to social

capital resources by female entrepreneurs will be examined by reviewing the developments of digital technologies and emergence of online social networks. The era of digitalisation has had a profound impact on the life of human beings. Individuals are more reliant on their computers, tablets, mobile phones and smartphones to interact and connect (Sia, Soh, & Weill, 2016). There has been phenomenal development over the last 10 – 15 years, changes seen in every facet of our life through interaction daily with the internet, search engines, social networking sites and apps on smartphones (Harjunkoski, Isaksson, & Sand, 2018). The digital revolution has created platform-based innovation which entrepreneurs can used to their advantage (Hsieh & Wu, 2019). The digital platform can be described as an instrument that "mediates the flow of information and thus enables the interconnection of products and services, as well as data flows between two different actors" (Casey, Kotovirta, & Ruutu, 2017, p. 119). Platform business can be found in a number of industries such as social networking, internet auctioning and retail, online financial services, mobile payment and urban technologies (Hsieh & Wu, 2019).

The evolution of web 2.0 technologies has created different platforms, such as crowdsourcing and crowdfunding, defined as "a way to harness the creative solutions of a distributed network of individuals" (Gerber, Hui, & Kuo, 2012, p. 2). Crowdfunding platforms allow the exchange of resources between the individual and funder for the idea to be realised. Crowdfunding provides the entrepreneur with an alternative approach for gaining the necessary financial resources and feedback on the products and services provided online (Laurell, Sandstrom, & Suseno, 2019). Social media has changed how people do things, thus attracting much attention; it can be defined as "a group of internet based application that build on the ideology and technological foundation of web 2.0, and allow the creation and exchange of user generated content" (Ngai, Moon, & Tao, 2015, p. 33). Social media has allowed people to connect across different social media platforms for varying reasons, such as socialising, career opportunities, building brands and generating revenue. Entrepreneurs are increasingly using social media to interact with each other utilising social media platforms such as Facebook, LinkedIn, therefore creating network ties (Shaw, Smith, & Smith, 2017). In light of the emergence and development of digital

technologies, this research intends to analyse how social capital has evolved and whether the access to online social capital by female entrepreneurs has provided financial capital necessary for firm growth and performance.

1.3 Context of the study

Africa an emerging economy is characterised by markets that are underdeveloped, causing a lag in transition to technology–led changes, hence countries that are less prepared will be impacted in their ability to remain competitive (Naude, 2017). The emergence of new technologies allows the process of entrepreneurship to happen; this refers to a process of converting an idea or invention into a product or service, creating value for the customer through existing business or a new venture (Hsieh & Wu, 2019). Entrepreneurship and innovation are synonymous with each other as both are important for organisational success and sustainable competitive advantage (Venter & Urban, 2015)Entrepreneurship is viewed as an important “engine to increase employment, promote technological innovation, and enhance economic growth” (Lv & Xie, 2018, p. 380). It is argued that entrepreneurs disrupt “market equilibrium by introducing new product-market combinations into a market” (Herrington, Kew, & Mwang, 2016-2017, p. 27).

According to Coleman and Robb (2010), new women-owned firms in technology tend to be smaller and less growth-oriented than their male counterparts, hence resulting in women partnering up with males in order to gain entry into male dominated industries (Dautzenberg, 2012).There is growing uptake in highly educated women who have gained managerial experience choosing to engage in entrepreneurial activities in growth sectors (Costin, 2012). Education and training are viewed as critical contributing factors to the level of TEA in South Africa. The Global Competitive Index measures the level of education, South Africa in the 2017/2018 period scored 4.1, indicative of poor education levels (Global Competitive Index, 2017/2018). TEA and the level of perceived capabilities directly correlate (Herrington, Kew, & Mwang, 2016-2017), therefore educational levels and skills of the individual are essential as this influences the entrepreneur’s confidence to start a business and manage one. There has been

research conducted on human capital and entrepreneurship reflecting a positive relationship (Ali, Brush, Greene, & Kelley, 2017). Despite the positive developments, women entrepreneurs continue to lag in access to financial assistance to grow business which can also be attributed to them not being willing to seek financial assistance (Costin, 2012). Women entrepreneurs tend to shy away from equity capital and the institutional support necessary for rapid growth, causing a further lag behind men (Reichard & Sweida, 2013). Technological changes provide the entrepreneur with numerous entrepreneurial (Aneja, et al., 2017). Yet women are less likely to start a new business compared to men, especially in growth–oriented entrepreneurship (Krylova, Meunier, & Ramalho, 2017). Contrary to expectation, women entrepreneurs still experience challenges in developing social and professional networks (Kaciak, Shamah, & Welsh, 2018). Therefore, there is merit in analysing the barrier faced by women entrepreneurs in accessing financial capital needed to succeed in growth oriented entrepreneurial activities.

The digital era in many ways, has created a 'digital gender divide' with 28,580,290 internet users in 2016 out of a population of 54,978,907 being female ,51% of the internet users in South Africa were female, despite the increase in women using technology, ''women of colour lag behind in higher education and advanced skills indicators" (Aneja, et al., 2017, p. 83), hence, creating a greater need for digital and labour inclusion environment for women in the South African economy. According to Herrington, Kew and Mwanga (2016/2017), TEA of males is 8% compared to females at 5.9%, with women more likely to start businesses out of necessity, compared to men. Hence, women resort to self-employment, an alternative to high unemployment. Developed countries tend to have more women engaging in opportunity motivated entrepreneurial activity than women in developing countries (Herrington, Kew, & Mwang, 2016-2017). According to the World Bank Group's Entrepreneurship Database, female owned high technology SMEs are "less likely to be organized as either corporations or as LLCs compared to men (61.3 percent versus 75.1 percent)" (Krylova, Meunier, & Ramalho, 2017, p.4)(Meunier, Krylova, & Ramalho, 2017, p.4). Instead these female owned technology start-ups are more likely to enter into a partnership or remain sole

proprietorships during their start-up year. These statistics further substantiate the lack of women participation and exacerbating the gender gap in business ownership.

Social capital becomes a critical and differentiating factor, especially in developing countries where financial and legal systems are lagging behind. The difficult experienced by female entrepreneurs in getting formal financial support is greater than men (Rooks & Solano, 2018). Female entrepreneurs tend to rely on diverse networks such as universities; incubator, female entrepreneurial networking organisations and small business development offices to gain access to resources outside their immediate circle (Caetano, Kalbfleiisch, Neumeyer, & Santos, 2018). The entrepreneur's social connection allows the entrepreneur to access resources derived from personal networks or diverse networks. The lack of social networks experienced by female entrepreneur and the difference in obtaining resources from their networks is analysed in this study within the context of digital networking. Digital transformation will widely affect various industries due to developments in artificial intelligence and machine learning, robotics, nanotechnology, 3D printing and genetics. This era of technological change has created room for new entrants in the market to exploit disruptive technologies / innovation to cater to fringe customers in the form of new ventures, thus, creating a nexus between the individual and the environment whereby entrepreneurs are able to exploit opportunities derived from technological changes and establish new ventures. Web based platforms allow for peer to peer transaction, exchange of information and generation of new products and service in a shared economy (Laurell, Sandstrom, & Suseno, 2019). Entrepreneurs are turning to crowdfunding to finance their projects by utilising digital social networks with other on the same platform or leverage from their social media networks (Buttice, Colombo, & Wright, 2017). This study will examine the access to resources, in particular financial capital via the female entrepreneurs' onine social capital.

1.4 Problem statement

The intention of the research is to examine the entrepreneur's social capital manifesting itself on online platforms and offline networks and which provides easier and better access to embedded resources necessary to enhance firm performance of women-owned firms, and social capital properties that lead to enhanced business performance of women owned firms.

Sub-problems

1. Assess the degree to which the use of online platforms accrue social capital and provide access to embedded resources, enhancing firm performance
2. Analyse the use of offline social capital by female entrepreneurs and access to embedded resources
3. Examine whether online channels foster higher bonding / bridging social capital

1.5 Research purpose, research question and aims of the study

Main research question: To what extent does the use of online platforms increase access to resources required by women entrepreneurs to enhance their social capital and firm performance?

Sub-question 1: To what extent does the use of online platforms accrue social capital and provide access to embedded resources and enhanced firm performance?

Sub-question 2: What are the elements evident in offline channels that lead to access to resources?

Sub-question 3: To what extent do online channels foster higher bonding / bridging social capital resulting in access to resources?

1.6 Conceptual/theoretical definition of terms

1.6.1 Social Capital

Social capital refers to the relationship between two agents that can provide the entrepreneur with actual or potential access to resources (Baron & Markman, 2003) Social capital is based on social structures susceptible to the entrepreneur. Social capital has varying definitions as the field advances, thus can be defined as “the aggregate of the actual or potential resources which are linked to the possession of a durable network of more or less institutionalised relationships of mutual acquaintance or recognition” (Urban, 2015, p.87).

1.6.2 Digital platform technology

The digital era has created a marketplace allowing and enabling the transaction between independent supply and demand side participants through the use of a digital platform (Laudien & Tauscher, 2018).According to Hsieh and Wu (2018, p.2) a platform refers to “a technology that allows other businesses to connect and build on top of it”. Digital platforms act as a medium that enables the flow of information and interconnection of products and services, matches demand side and supply side participants in an unprecedented manner, connecting different resources and actors (Saarikko, 2016; Casey, Kotovirta & Ruutu, 2017).

1.6.3 Crowdfunding platform

Digital platforms link interested parties over the internet based on the demands of the participant and ability of the other party to fulfil these needs. Crowdfunding is an internet platform, defined as “a method to establish the connection between entrepreneurs, who aim to raise capital, and novel investors, who form an emerging source of capital and are willing to invest small amounts, through internet-based intermediaries“ (Jegeleviciute & Valanciene, 2015, p. 601).This platform is dependent on an online social community necessary to solicit the exchange of resources between the creator and the funder (Gerber, Hui, & Kuo, 2012).

1.6.4 Entrepreneurship

New venture creation is an important aspect of entrepreneurship, Schumpeter (1934), cited by Venter and Urban (2015, p.8), defines entrepreneurship or rather the entrepreneur as “an innovator who carries out new combinations of economic development, which are new goods, a new method of production, new markets, new sources of raw materials, or a new organisation form”.

Entrepreneurial opportunity refers to the action between the individual and the environment. The digital transformation is technology driven, organisations that are highly technology–oriented tend to focus much of their activity and processes on generating new ideas or adopting new methods (Davidson & Vaast, 2010Chen, Jin, Li, Tang, & Xie, 2014).) The output is product innovation, service innovation and new market creation driven by changes or adoption of technological advances. Rather, studies have been conducted on adopting digital business strategy, the pace of digitalisation on certain industries, the control and operations of manufacturing, competitiveness and product innovation performance.

1.7 Contribution of the study

Social capital has been studied extensively over the years, the origins and definition of social capital in this study is reviewed based on the work of Bourdieu, Loury and Coleman. Bourdieu in his work provided a critical analysis of social capital defining summarising it as a social relationship that allows individuals to gain access to resources owned by associates (Portes, 1998). Other writers defined social capital within the economics context, the access to opportunities based on the individual’s social connections. Coleman (1988) further refined the concept of social capital incorporating the human capital element. Adler and Kwon’s (2002) extensively analysed social capital as it was becoming an increasingly important construct within entrepreneurship. Social capital is guided by the notion that “the goodwill that others have towards us is valuable resources” (Adler & Kwon, 2002, p.18). This goodwill is essential in attaining needed influence, resources and sponsorship (Adler & Kwon, 2002,

cited by Venter and Urban, 2015). Social capital is a fundamental theory of entrepreneurship as entrepreneurs are socially situated, hence the value embedded in their social relationship becomes increasingly important in order to discover opportunity, evaluate and exploit the market (Gedajlovic, Honig, Moore, Payne, & Wright, 2013). The distribution of social capital is significantly different for women entrepreneurs compared to their male counterparts, as women historically have been excluded from access to male dominated networks such as politics and certain industries (Caetano, Kalbfleiisch, Neumeyer, & Santos, 2018). In addition, panel studies have been conducted in both developed and emerging economies, examining the participation of women in entrepreneurial activities. The GEM report has added to literature by tracking the entrepreneurial activity of women, reflected by the level of female participation in entrepreneurship. The rate of female participation in entrepreneurial activities compared to male counterparts is lower which has been attributed to barriers experienced in the form of education level, experience in relevant fields, knowledge, access to financial resources and lack of personal networks or relationships (Kalyani & Kumar, 2011). Therefore, this creates a perception among women that partnership with a man will allow them access to industries and cultures that exclude them based on their sex (Dautzenberg, 2012). According to the GEM South African Report, men are more likely to engage in entrepreneurial activities than women, citing “obstacles include: higher levels of domestic responsibility; lower levels of education (particularly in developing countries); lack of female role models in the business sector; fewer business-orientated networks in their communities; lack of capital and assets and lower status in society” as reasons prohibiting women in becoming and engaging in entrepreneurial activities (Herrington, Kew, & Mwang, 2016-2017, p. 32). The increased digitalised environment has led to drastic changes, allowing the sharing and exchange of information, knowledge and data on online platforms (Brem, Chang, Cheng, Kraus, & Richter, 2016). Web based platforms create a sharing economy, whereby unused resources are utilised and novel resource are used to generate new products and service offerings (Eriksson, Geissinger, Laurell, Nykvist, & Sandstrom, 2018)The idea of crowdfunding has gained momentum in the field of entrepreneurship as artists and entrepreneurs seek other methods to fund their projects by utilising social

networking entrepreneurial idea, increasing potential in early stage financing (Agrawal, Catalini, & Goldfarb, 2015). Research suggested that gender impacts the favourable effects of social capital and networks, female entrepreneurs continue to lag behind especially in high growth industries as they experience biases hindering their access to financial capital (Caetano, Kalbfleiisch, Neumeyer, & Santos, 2018). This study intends to contribute to literature and female entrepreneurship theory by examining how female entrepreneurs are utilising digital platforms and digital networking to access online social capital necessary to obtain financial resources.

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CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This section begins by providing an expanded description of social capital, with particular focus on digital platform The following sub section focus on female entrepreneurship and overcoming challenges in accessing social capital resources necessary for firm performance of women owned business ventures. Hypotheses are developed, based on the theoretical review by examining the relationship between social capital, digital platforms, access to resources and performance of women owned ventures in Gauteng and Western Cape Province. Further, a conceptual framework is developed, based on the review of literature

2.2 Social capital as an entrepreneurial capital

Social capital is defined by its role; unlike other forms of capital, it is inherent in the structure of the relations between two agents (Coleman, 1988). The concept of social capital has gained acceptance over the years. Putman viewed social capital as “collective values and societal integration” and Bourdieu’s was “actors engaged in struggle in pursuit of their interests” (Siisiainen, 2000, p. 5). Adler and Kwon (2002, p.22) defined social capital as “the goodwill available to individuals or groups. Its source lies in the structure and content of the actor's social relations. Its effects flow from the information, influence, and solidarity it makes available to the actor”. According to Lin (2005, p.4), social capital refers to the “resources embedded in one’s networks, resources that can be accessed or mobilised through ties in the networks”. Bourdieu provided great insight to the concept of social capital as he focused more on the benefits derived from individuals by virtue of participating in social relationship for the purpose of creating resources (Portes, 1998).

Social capital is an important theory within the entrepreneurship literature. The social structure in which the entrepreneur finds themselves in, defines the

resources that are accessible to the entrepreneur through the actor's network of relationships (Ghoshal & Nahapiet &, 1998, cited by Arzlanian, Elfring & Stam, 2014). There are a number of definitions; however central to the social capital theory is the way in which individuals are interconnected with each other (Corten & Norbutas, 2018). Social capital is located in formal social structures consisting of different types of relations: "(1) market relations, in which products and services are exchanged for money or bartered, (2) hierarchical relations, in which obedience to authority is exchanged for material and spiritual security, and (3) social relations, in which favours and gifts are exchanged" (Adler & Kwon, 2002, p.18). The degree of return is an important component to social capital, the ability of the individual to access and mobilise resources embedded in one's social networks (Lin, 2005).

Studies have focused on cognitive factors and processes as determining factors as to why some entrepreneurs are more successful than others, however additional factors need to be considered, attributing to how the entrepreneur engages with other people (Baron & Markman, 2003).It is essential to make a distinction between social networks and social capital as these concepts are not the same, social networks provide the individual with the necessary conditions to access and to use embedded resources (Lin, 2005). Social capital plays a distinct role in the entrepreneurial process, this involves ''why, when and how certain people unearth and develop opportunities" (Venter & Urban, 2015, p.21). Social capital concepts vary depending on whether the focus is on the substance, the sources or the effects of social capital (Adler & Kwon, 2002). The individuals' position in a social network can be beneficial in attaining actual and potential resources linked to the network of mutual acquaintance (Burke, Kraut, & Marlow, 2011).Two forms of social capital are derived that focus on external and internal relations, namely bridging and bonding. The network theory of social capital emphasises the importance of social relations by differentiating between intensity and reciprocity, ties may engage in intense and reciprocal interactions, creating strong ties in a dense network (Lin, 2005). A distinction is made between two important concepts, weak ties relate to the concept of bridging social capital and strong ties relate to the concept of bonding social capital (Brandtzaeg, Heim & Kaare, 2010). Ellison, Lampe and

Steinfield (2007) further describes ‘bonding’ as individuals in an emotionally close relationship. The term ‘bonding’ refers to pre-existing offline social groups that are based on reciprocity, emotional support and companionship whereby parties exchange and service each other (Brandtzaeg, Heim & Kaare, 2010).

The two primary perspectives of social capital refers to bonding social capital, a reciprocal relationship based on trust and strong repeated social connections Bridging social capital on the other hand is based on external connection that provides non-redundant resources (Gedajlovic, Honig, Moore, Payne, & Wright, 2013).This form of social capital exists among “family members, close friends, neighbours and supportive co- worker” (Kwan & Skoric, 2011, p. 469). Bonding social capital focus on internal ties within collectives derived from a strong tie and connection based on trust and willingness to help each other. These internal ties are usually “homogeneous groups within tightly knit networks of interaction, such as family or circles of close friends” (Corten & Norbutas, 2018, p. 122). Adler and Kwon (2014, p.412) further suggested that the goodwill available to individuals lies in its “information, influence, and solidarity benefits that accrue to members of a collectively (“bonding” social capital) and to actors, whether individual or collective, in their relations to other actors (“bridging” social capital)”. Acquaintances create a diverse perspective, allowing one to engage with external groups without the emotional support (Burke, Kraut, & Marlow, 2011).

2.2.1 Dynamics of networking

Bridging social capital does not rely on the individual’s inner circle, rather the intensity of the relationship tends to decrease and becomes more diverse as one reaches out to the outer layer to gain greater access to better resources (Lin, 2005). Bridging social capital are weak ties, loose in nature and provide useful information or opportunities, however, exhibit no emotional support According to Shaw, Smith and Smith (2017), bridging social capital refers to structural connections with others, consisting of weak tie connection with diverse individuals and focuses mainly on resources. This allows the individuals to interact with people from heterogeneous backgrounds, providing information

on job offerings, and knowledge that is not available in the individual's immediate circles (Corten & Norbutas, 2018).Entrepreneurial social capital is embedded in the social relations of the individual (Venter & Urban, 2015). Social relations refer to "social network research involving the study of sets of actors and the relations that connect and divide them", deemed as important to networks and firm success (Brass & Kilduff, 2010, p. 319)

The ability of the entrepreneur to exploit social networks through diverse social network ties is key to accessing financial capital, provides support, advice and expertise (Leyden, Link, & Siegel, 2014). Network ties refers to the intensity of the connection, further classified as strong ties which refers to family relationships and personal relationships and weak ties refers to loose relationships, linking individuals and organisations for an exchange to take place (Venter & Urban, 2015). Both are categorised as bonding and bridging respectively.Strong ties and weak ties are categorised as bonding and bridging respectively. Informal network ties are effective as they provide the entrepreneur with knowledge flowing from contacts (Venter & Urban, 2015). However, new ventures "perform better when entrepreneurs have personal networks that facilitate alertness to emerging threats and opportunities" (Arzlanian, Elfring & Stam, 2014, p.157). The size of the firm becomes a determining factor on the type of network required to support business performance. Network diversity refers to "persons with different backgrounds and social positions, increases the scope of resources available to entrepreneurs" (Arzlanian, Elfring & Stam, 2014, p.156). Diverse networks have the potential to provide women with much needed access to business equity capital markets (Erogul & Goby, 2011). A strong social capital in the form of heterogeneous networks is essential for the growth and success of women owned businesses. Diverse personal networks are valuable for small firms as the entrepreneur is able to quickly mobilise resources (Arzlanian, Elfring & Stam, 2014).

2.2.2 Social capital and female entrepreneurship

Women owned firms in growth-oriented industries tend to be smaller and less likely to grow, compared to men owned firms (Coleman & Robb, 2010).This can be attributed to the fact that female entrepreneurs have limited access to human, social and financial resources, hence tend to rely on their family domain to gain meaningful resources for their business success (Eddleston & Powell, 2013). Entrepreneurship is often viewed as a masculine concept, further perpetuating the status-related hurdles with financial provider, customers and suppliers (Bradley, Justo, & Milanov, 2015). Female – led businesses tend to be far weaker than male–led business in terms of scale, profit and development potential, relating to financial constraints and lack of networking faced by women (Lv & Xie, 2018).Female entrepreneurship has the potential to increase economic growth and job creation, therefore there is a need to investigate whether the gender of the entrepreneur affects the performance of the business (Locke & Wellalage, 2017).Female owned ventures experience slower growth, lower sales, performance and profits compared to their male owned counterparts (Eddleston & Powell, 2013). Growth oriented industries such as high-technology manufacturing and technology based services require extensive financial capital; female entrepreneurs carry a high failure rate due to the lack of resources required for their technology start-ups (Lv & Xie, 2018).

2.2.3 Social capital and women's access to resources

Entrepreneurs' social capital contributes to the success of these ventures as this allows them to gain access to key outcomes, such as obtaining finances, attracting key skills and potential suppliers (Baron & Markman, 2003). Social capital can create unequal advantages to the point of causing imperfect competition as certain individuals obtain more entrepreneurial opportunities than others (Shaw & Stringfellow, 2009). Hence, high social capital is likely to exclude women or minorities from key networks that could provide access to external sources of capital (Coleman & Robb, 2010). There are a number of factors hindering the performance of women entrepreneurship in Africa; Kalyani and Kumar (2011, p.19) identified " (1) hassle of getting permits; (2) the lack of

market; (3) the ability to raise capital; (4) not being taken as seriously as men". Further, for women in the United Arab Emirates, a compelling context relied predominately on family as a support system for entrepreneurial activities due to the lack of contact to potential male business networks and exclusion from formal and informal networks (Erogul & Goby, 2011). According to Evald, Klyver and Nielsen (2013), women disguise their entrepreneurial activities in an effort to be accepted by society hence missing out on essential networks and resources. Women entrepreneurs in Saudi Arabia experience the same challenges in lacking access to networks: "64% joining formal networks, 59.8% networking and building relationships (Kaciak, Memili, Sadoon, & Welsh, 2014, p. 760). Personal ties have been considered an essential aspect of the entrepreneur's social capital; this is evident in microfinance literature as entrepreneurs are more likely to join microcredit groups in order to gain access to financial capital and valuable networks (Bradley, Justo, & Milanov, 2015).High social capital can create some sort of inequality, due to benefits derived from social capital that enhances access to information and increases co-operation from others (Adler & Kwon, 2014). Social networks are an integral part of the entrepreneurial process as the entrepreneur searches for knowledge that can be acquired from accessing social networks (Leyden, Link & Siegel, 2014). The resources embedded in the relationships of the entrepreneur can be regarded as a competitive advantage as it may be difficult to imitate by the competitor (Henneberg, Naude, & Thornton, 2015).The interaction of the entrepreneur and other actors helps with the start, development and sustainability of emerging ventures (Coy, Hanson, Pollock, Rutherford, & Seers, 2016).). Social capital is essential to the entrepreneur as helps in ways such as "capitalizing on market opportunities, identifying, collecting and allocating scarce resources, gathering information, influence, sponsorship and providing legitimacy" (Shaw, Smith, & Smith, 2017, p.20). Table 1 provides an overview of social capital theory and identified barriers in literature.

Table 1: Summary of Social Capital and Female entrepreneurship

Concept	Common features 'definition'	Resources derived	References
Social Capital	• Accessible resources from network of relationships • Goodwill generated through network of relationships • mobilising networks to attain resources • benefits derived from social relationships • resources embedded in social structures	• obtaining strategic resources in form of tangible capital • providing access to intellectual, financial and cultural resources • facilitates access to information, co-operation and trust • economic returns from strategically exploiting networks • actual resources, such as information, assistance or money	Camerero – Izquierdo, Hernandez – Carrion & Gutierrez & Cillan, 2018, p.3; Arzlanian, Elfing & Stam, 2014 Shaw, Smith & Smith, 2017 Adle, 2014 Kwon & Adler, 2002, Brass, 2010 Leana & Van Buuren, 1999 Ellison, Steinfield & Lampe, 2007 Siedlecki & Tazghini, 2013 Gonzalez – Alvarez & Nieto, 2014 Ellison, Lampe & Steinfield, 2008 Hashim & Salisu, 2017 Maness, 2017 Durst, Hacker & Grottke, 2018 Kwan & Skoric, 2011 Burke, Kraut & Marlow, 2011 Brandtzaeg, Kaare & Heim, 2010 Williams, 2006
Bonding Social Capital	• Strong tie connection and contain homogeneous resources	• obtain basic and generic resources such as financial capital or non-specialised	Camerero – Izquierdo, Hernandez – Carrion & Gutierrez – Cillan, 2018,

(Strong ties)	• Strong ties with emotionally close relationships such as family, close friends or people with shared interests	resources • gain emotional support and motivation	p.6 Shaw, Smith & Smith, 2017 Adle, 2014 Kwon & Adler, 2002 Ellison, Lampe & Steinfield,2007 Ellison, Lampe & Steinfield, 2008 Durst, Hacker & Grottke, 2018 Kwan & Skoric, 2011 Burke, Kraut & Marlow, 2011 Sajuria, Theocharis & van Heerder – Hudson, 2015
Bridging Social Capital (Weak ties)	• Weak tie connections between diverse individuals • Weak ties that consist of acquaintances, external groups and people outside individual's close knit – heterogeneous groups	• Entails less emotional attachment providing individual with new and additional resources necessary for firm growth • provide access to less redundant, more specialised resources and novel information required for desired outcome	Camerero – Izquierdo, Hernandez – Carrion & Gutierrez – Cillan, 2018, p.6 Shaw, Smith & Smith, 2017 Kwon & Adler, 2002, Ellison, Lampe & Steinfield, 2008 Durst, Hacker & Grottke, 2018 Kwan & Skoric, 2011 Burke, Kraut & Marlow, 2011 Sajuria, Theocharis & van Heerder – Hudson, 2015 Brandtzaeg, Kaare & Heim, 2010

Identified gap in female entrepreneurship	• Barriers and challenges: • Lack of access to finance, start – up capital. Formal credit, • partnering up with men to access formal and informal financing • have less access to human, social and financial capital • rely on family resources to access financial capital necessary for firm growth • gain more meaningful business success from family to business enrichment • Women face barriers of financing and networking affecting business performance • differences in males' and females' networking activities impacting firm performance • lack of strategic networks • limited access to business contacts and information	• Personal networks useful in the start - up phase • Diverse network required for firm growth and development • personal networks build legitimacy however other types of network required to mobilise resources • women more likely to turn to family and friends for advice • Women's network idhomogeneous compared to males	Locke & Wellalage, 2017; Eddleston & Powell, 2012 Lv & Xie, 2017; Bradley, Justo & Milanov, 2015, Cooper & McGowan, 2011; Klyver & Grant, 2010; Bogren, Rennemo, von Friedrichs & Widding, 2013; Rooks & Solano, 2018; Lindvert, Patel & Wincent, 2017; Surangi, 2018

2.2.4 The emergence of online social capital and social networks

Online social network tools have created an avenue for individuals to connect, forming both strong and weak ties (Ellison, Lampe & Steinfield, 2007).The social interaction via social media like Twitter and Facebook are tools used by

individuals to “facilitate inter and intra organisational activities among peers, customers, business partners and organisations” (Ngai, Moon, & Tao, 2015, p. 33)Entrepreneurs are using online social networks to gain access to resources needed to achieve venture outcomes, however there is a lack of information regarding how social capital manifests itself online (Shaw, Smith & Smith, 2017). Women in emerging economies experience unequal access to opportunities and markets including weak business associations and lack of networking (Kalyani & Kumar, 2011). Social capital in the form of networks is regarded as a valuable source for entrepreneurs in low and high-technology industries (Arzlanian, Elfring & Stam, 2014). Networks of entrepreneurs can be expanded beyond personal networks and investors to include suppliers, clients, and other firms necessary for the success of the business (Choi, Kim, & Nam, 2018).Social networking platforms, such as Facebook, Wechat, Twitter and LinkedIn, are used by entrepreneurs as platforms that provide an uncomplicated way to communicate and obtain feedback (Hsieh & Wu, 2018). Social media can be described as “an application used to create, share and exchange information in a virtual community. This has shaped how people connect via social media platforms” (Ngai, Moon & Tao, 2015, p.33). Social media connects people at individual, organisational and social level, beneficial to the entrepreneur as it provides a platform for information sharing, raising funds, starting and running a business (Fischer & Reuber, 2011). Entrepreneurs are actively using social networks via the web to exploit and explore opportunities in their pursuit of international ventures (Chetty & Sigfusson, 2013).The use of social networks requires the entrepreneur to develop digital social competency – “situation reading and how others interpret their competency’’ (Shaw, Smith & Smith, 2017, p.24). Social network platforms such as Facebook, other platforms such as games, social activities and media contents can be used to solicit indirect networks (Choi, Nam & Kim, 2018). According to Gyor, Koltaib and Lorincza, (2018, p.44), there is evidence that “direct person to person communication on Facebook is associated with bridging social capital”.

Entrepreneurial network groups are another form of tool used by entrepreneurs to forge social ties by joining a business network with annual fee payments and group meetings to gain access to resources, information and an increase in the

firm's performance (Coy, Hanson, Pollack & Rutherford, 2016). Network oriented behaviour can be defined as "activities/routine/practices, which enables firms to make sense of and capitalise on their direct and indirect relationships'' (Henneberg, Naude & Thornton, 2015, p.169). Entrepreneurial networks are networking groups that form new social ties that result in information, resources and business growth (Coy, Hanson, Pollack, Rutherford & Seers, 2016). Recent research has argued that ties formed in online environments potentially provides similar quality and quantity of social capital compared to offline (Corten & Norbutas, 2018). Hence, online social ties can be regarded as a source of social capital despite the geographical location. Networks can benefit organisations in a myriad ways, such as gaining legitimacy, access to resources, collaboration and financial capital (Chandna & Salimath, 2018, p. 162).

In summary, bonding social capital and bridging social capital are key, leading to the following hypotheses:

H1a: There is a positive relationship between bonding social capital in terms of online networks and access to resources financial capital by female entrepreneurs

H1b: There is a positive relationship between bridging social capital in terms of online networks and to access to financial capital by female entrepreneurs

H1c: Offline networks are positively related to financial capital for female entrepreneurs

2.3 Digital technologies and entrepreneurship

The Fourth Industrial Revolution brings forth rapidly emerging technologies such as the Internet of Things, artificial intelligence, wearables, robotics and additive manufacturing. Technological breakthroughs can be used "to reduce operational costs, improve quality and expedite innovation with the objective of creating sophisticated products and markets" (Berawi, 2018, p. 2).The internet of things has caused a paradigm shift evident in the exponential growth of smart

devices that connect all things, data and services with people. The fourth industrial revolution calls for an integrated approach to the production process, resulting in a fusion of the physical and digital worlds. This has transformed economic paradigms and mechanisms to create added value and benefits such as efficiency, effectiveness, customisation, quality and innovative products, projects and services. Berawi, (2018, p.1) identifies “technologies such as smart and intelligent machines, artificial intelligence, cyber production systems, and three-dimensional technology are increasingly being used to accelerate product or service competitiveness”. The evolution of technology has had a significant impact on how businesses compete, by reducing operational costs, improving quality and expediting innovation with the sole purpose of creating sophisticated products and markets.

Disruptive technology is more than a new technology, “fundamental changes in technology that bring about revolutionary change” (Garrison, 2009, p.445). Farr, Nilchiani and Ganguly (2010, p.34) define disruptive technologies as “an emerging technology that changes the whole basis of market competition through operating in an altogether different set of performance metrics in which firms compete”. Disruptive innovation and technologies, according to Obal (2013), appeal to a niche customer base, over time it improves and displaces dominant technology that has been used by mainstream customers. Innovation is key in both factor-driven and efficiency-driven economies as this factor alone can drive countries from one economy to the next, creating opportunities. The GEM report atated taht 45% of South Africa entrepreneurs use no new technologies in their business, therefore products and services created incorporate little or no technology innovation (Herrington, Kew and Mwanga, 2016/2017),.

2.3.1 Digital platform technologies

Platform technology is regarded as common core technology, allowing agents to connect to it (Hsieh and Wu, 2018). Saarikko (2016, p.179) defines a platform as “a set of assets that enable firms to efficiently develop derivative or complementary products, and digital innovation, which describes the flexibility

and generative potential of combining reprogrammable devices attributes enabled by digitization". Digital platforms mediate the flow of information and connect products, service and data flow between different actors (Casey, Kotovirta, & Ruutu, 2017).. Technology platforms connect unmatched demand and supply participants catering to a diverse network of stakeholders (Choi, Kim, & Nam, 2018).Platform based markets have increased over the years, providing offerings such as application stores, Android, IOS and Windows mobile (Cenamor, Fernandez, & Usero, 2013).Platform businesses are growing in number, hence the platforms will be distinguished based on their function "(1) innovation platform develop complementary products and services such as Apple IOS and Google Android (2) transaction platforms linking the individuals and institutions through various interaction and commercial transactions such as Amazon (3) E-commerce platforms which allows the exchange of goods and services between individuals such as Uber, Airbnb and Sweep south (4) Integrated platforms offer the option to transact and invocate (5) Investment platforms refers to holding companies who manage a portfolio of platform companies" (Hsieh & Wu, 2019, p. 3).Platforms are designed to promote access and stimulate the network effect to ensure that value is obtained by the user and owner (Fu, Wang, & Zhao, 2017).

2.3.2 Digital platforms and influence on networks

Digital platforms mediate the flow of information across any geographical area (Hsieh & Wu, 2018). Digital platforms are flexible as they encourage "participants to serve each other, to co-create value and to stimulate network effects" (Fu, Wang, & Zhao, 2017, p. 349). Network diversity enables entrepreneurs to develop legitimacy for their small firms, by breaking barriers such as access to resources, economies of scale and start-up capital faced by new ventures (Arzlanian, Elfring & Stam, 2014). Firms using platform technology to provide products or services are using the concept of value co-creation which refers to "benefit realized from integration of resources through activities and interactions with collaborators in the customer's service network" (Fu, Wang & Zhao, 2017, p.349). The network effect can be described as a process whereby an agent selects a technology that offers clear advantages,

adopts the product or service, therefore attracting more adopters directly and indirectly by drawing attention of complementary products providers (Cenamor, Fernandez & Usero, 2013). The network effect can be further defined as “a good is often more valuable to any user, the more others use compatible goods” (Farrell & Saloner, 1986, p.940; cited by Afuah, 2013). A distinction is made between the direct and indirect network effect. According to Afuah (2013), both weak and strong ties are important drivers of the value users derive from their networks: weak ties for locating what needs to be exchanged and strong ties for making exchanges. The more agents using a platform, the more valuable the platform will be to both the user and owner, hence creating the network effect (Fu, Wang & Zhao, 2016). Direct network effect refers to “one group’s benefits from joining a platform depend on the group size” (Inoue & Tsujimoto, 2017, p. 1). Therefore the value of the platform increases when the total number of users increases. Indirect network effect has a multi–sided market approach, the “profit of one group depends on the size of other groups in two sided or multi sided market” (Inoue & Tsujimoto, 2017, p.1).

The scalability of the platform is evident in the network effect, the direct network is determined by the value of the actor and on the size of the same actor group (Chandna & Salimath, 2018).Indirect networks refer “to the increased benefits to a user that results from the increased number of related products and services in the platform” (Choi, Nam & Kim, 2018, p.2). The benefits of digital platform are the large customer base that enables the entrepreneur or firm access to unlimited data that can be used to tailor services and products to meet changing customer taste (Casey, Kotovirta & Ruutu, 2017). The network effect allows companies to create value by tapping into resources and capacity that they do not own. There is a shift towards a more digital arena which implies a new way of sharing knowledge internally and across organisational boundaries (Hossain & Lassen, 2017). The barriers faced by women are mitigated by the ubiquity of the internet and access to two-sided platforms as the entrepreneur has access to networks of current sellers through forums and discussion boards (Chandna & Salimath, 2018).

2.3.3 Crowdfunding platforms and entrepreneurship

There is strong agreement that social capital or the resources embedded in these networks are critical to any performance of new ventures (Arzlanian, Elfring & Stam, 2014). Access to financial resources remains a challenge for entrepreneurs seeking to start a new venture, there are different types of financing strategies, such as debt financing, banks, micro-financing and equity financing (Venter & Urban, 2015). Web 2.0 technologies have created a new trajectory, crowdfunding platforms is a form of micro-financing defined as an "open call, essentially through the internet, for the provision of financial resources either in form of donation or in exchange for some form of reward and/or voting rights in order to support initiatives for specific purposes" (Mollick, 2014, p. 2).This method of financing is dependent on the interaction between the investor and the entrepreneur, based on the collection of funds in return for tangible and intangible benefits (Jegeleviciute & Valanciene, 2015, p. 601). Crowdfunding provides businesses with an alternative method to explore for financial support and feedback on projects, products or services (Laurell, Sandstrom, & Suseno, 2019). Entrepreneurs use online platforms differently to accrue the necessary social capital (Smith, Smith & Shaw, 2017).

Crowdfunding platforms are a social environment, individuals' social media presence positively impacts on promoting crowdfunding projects, hence increasing the likelihood of obtaining funding (Kang, Jiang & Tan, 2017). A strong presence on social networking sites such as Facebook, Instagram and Twitter is a contributing factor to successful project funding as the information on the founder and founding organisation adds legitimacy to the project (Brem, Chang, Cheng, Kraus, & Richter, 2016). Networks are a critical component to crowdfunding, social networks "facilitate the identification and assessment of investment opportunities" (Lukkarinenn, Teich, Wallenius, & Wallenius, 2016, p. 29). This platform not only provides entrepreneurs with financial resources, it provides the entrepreneur with a platform to test new products and services (Cordova, Dolci, & Gianfrate, 2015). The ability of the entrepreneur and new venture to leverage social media networks correlates strongly with success in both the number of investors and amount raised (Lukkarinen, Teich, Wallenius

& Wallenius, 2016). According to Kang, Jiang and Tan (2017), the external network size of the entrepreneur and the entrepreneurs' ability to leverage from contacts in social networks can potentially improve the probability of more funding. The establishment of social ties provides the investor with information about the founder and how they behave which acts as a performance track record for the investor to make a decision (Perrone, Petruzelli, & Roma, 2017). Crowdfunding and social media are highly intertwined as the individual's online social network to some degree, influences the success of crowdfunding efforts (Laurella, Sandstromb & Suseno, 2018).

The entrepreneur's social capital is important, the entrepreneur's online contacts has potential to cause a snowball effect, increasing the probability of the entrepreneurial venture or project obtaining financial backing from the crowd of investors and access to information (Kang, Jiang & Tan, 2017). Social ties stimulate trust between two parties, allowing the transfer and exchange of information. Petruzzelli, Perronea and Roma (2017) maintain that social ties provide the entrepreneur with access to a large pool of strategic resources, as the wide networks tend to endorse the founder, creating opportunities for the entrepreneur.

2.3.4 From entrepreneurship to digital entrepreneurship

Before the concept of digital entrepreneurship is discussed, it is important to note the connection between digital technologies and entrepreneurship. Digital entrepreneurship exacerbates changes in the competitive landscape, allowing the pursuit of opportunities based on the use of digital media and other information and communication technologies (Davidson & Vaast, 2010,p.4). Digitalisation has created new avenues in the entrepreneurial process, breaking down the boundaries in the different phases, creating more diversity and evolving sets of agents varying in goal, motives and capabilities (Nambisan, 2017, p.1030). Digital technologies have created competitive advantages, characterised by the ability to process and transfer information between two agents instantly and easily and the added benefit of digitising processes and activities (Dutot & Van Horne, 2015). Digital entrepreneurship is a phenomenon

derived from technological assets, used to transfer entrepreneurial activities into digital (Kraus S. , Kailer, Kallinger, Palmer, & Spitzer, 2019). The major difference between traditional entrepreneurship and digital entrepreneurship is that these ventures take place digitally instead of creating new enterprises or commercialising products and services (Ngoasong, 2017, p.483). In this paper, digital entrepreneurship is defined as "a subcategory of entrepreneurship in which some or all of what would be physical in a traditional organization has been digitized", therefore viewed as "the sale of digital products or services across electronic networks" (Kraus S. , Kailer, Kallinger, Palmer, & Spitzer, 2019, p. 354). Entrepreneurial studies have ignored the importance of digital technologies in the pursuit of opportunities in forums ranging from social media to crowdfunding platforms, technologies used to connect diverse entities with entrepreneurial opportunities (Nambian, 2017). This field of entrepreneurship is relatively new and topical, suggesting that the digital environment lowers barriers experienced in terms of social inequalities. Critics argue that barriers experienced offline are equally present in online activities (Kraus S. , Kailer, Kallinger, Palmer, & Spitzer, 2019). Ngoasong (2017), in his study, suggested that the impact of resource scarcity can be overcome dependent on the entrepreneurs' digital competencies; the entrepreneur has the ability to overcome logistic challenges and physical infrastructure difficulties by connecting buyers and sellers online.

2.3.5 Performance of Female owned firms

Performance can be defined in the context of the *Theory of the Growth of the Business* (Penrose, 1959), which defines growth as both an "internal process of development" and an "increase in amount" (Costin, 2012, p.109). There are various ways to measure the growth and performance of a business which include financial and non–financial. In most cases, performance is measured based on employment growth and profit, however there are other determinants that contribute to the performance of the firm. The existence of any business is to generate revenue and profit. Venter and Urban (2015, p.25) defines high impact entrepreneurs "as entrepreneurs inclined to pursue growth and innovation and are actors that intensify competition and provide largest potential

for new jobs". Female entrepreneurs experience challenges such as "higher levels of domestic responsibility; lower levels of education (particularly in developing countries); lack of female role models in the business sector; fewer business-orientated networks in their communities; lack of capital and assets" (Herrington, Kew, & Mwang, 2016-2017, p. 31). Hence, female entrepreneurs in developing economies are less likely to start a new business compared to men (Krylova, Meunier, & Ramalho, 2017). Female entrepreneurs are more likely to operate in informal sectors or are home based, hence leading to limited access to resources (Locke & Wellalage, 2017). The Female Entrepreneurial index highlights the importance of high potential females and their participation in entrepreneurial activities. Terjesen and Lloyd (2015) refer to high impact female entrepreneurs as those who exhibit characteristics associated with high outcomes in the future. Therefore, there is a need to focus on the shortage of resources and lack of industry reputation, especially in growth-oriented industries experienced by female entrepreneurs. Given that the prior empirical findings do not suggest a clear outcome on social capital on crowdfunding platforms or digital platforms for the female entrepreneurs, we propose two hypotheses:

H2a: The use of crowdfunding platforms by female entrepreneurs is positively related to access to Financial Capital

H2b: High social capital on online platforms is positively related to firm performance of Female entrepreneur's

2.4 Conceptual framework of hypotheses

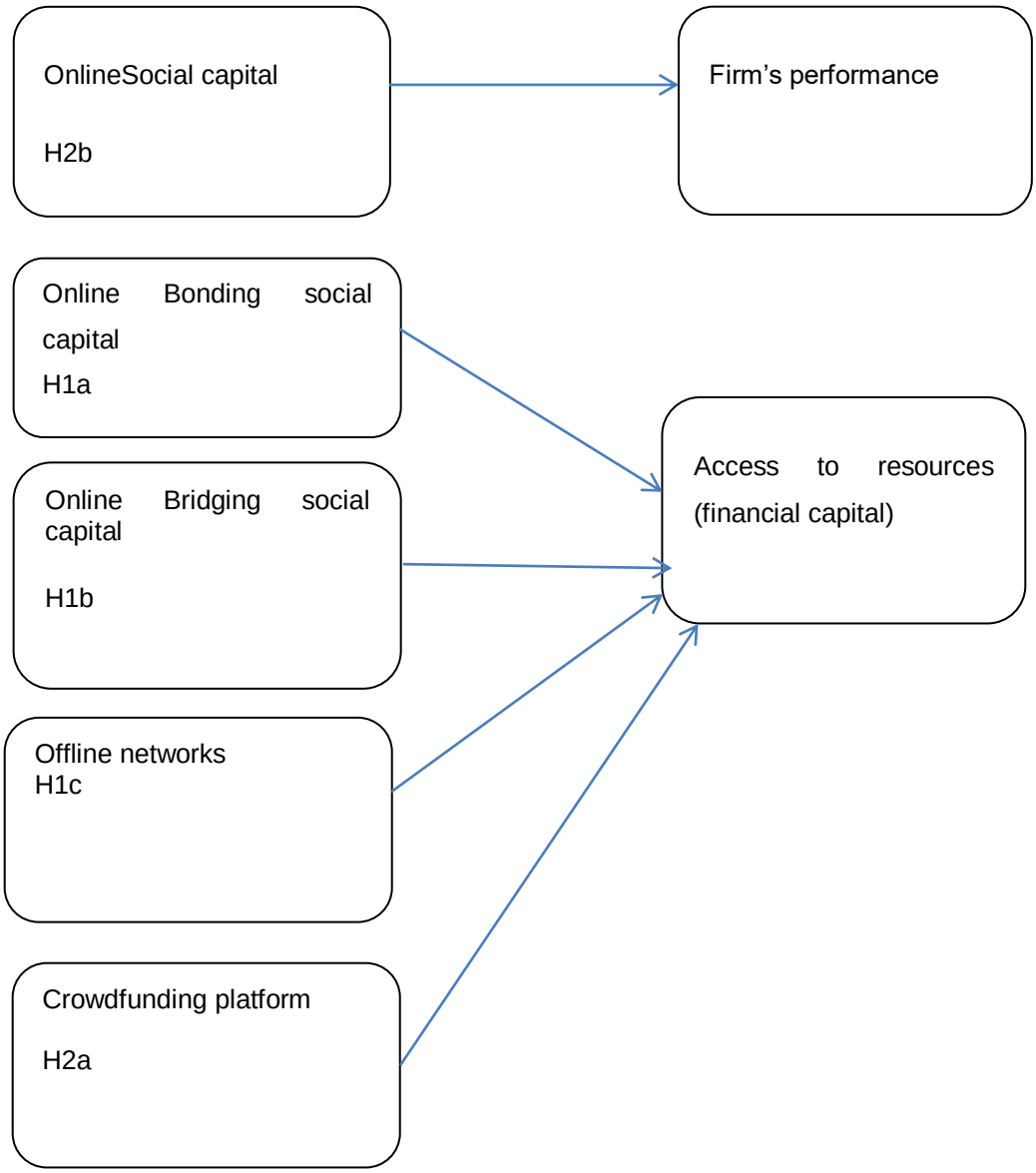


Figure 1: Conceptual framework on how social capital, online and offline networks affect access to financial capital and impact on firm's performance

2.5 Conclusion of Literature Review

There are various factors limiting the participation of women in entrepreneurial activities hence resulting in lower levels of participation in high potential entrepreneurship. This section presented social capital in light of the digital era,

new digital technologies have created a new avenue for female entrepreneurs to explore and exploit opportunities available on digital platforms. The role of social capital has been extensively studied within entrepreneurship; however there should be more focus on how the role of social capital has evolved due to digital networking and digital platforms. Digital technologies have had a profound impact on entrepreneurship, these technologies facilitate a sharing economy characterised by sharing digital content, physical goods and crowdfunding. Social capital plays an imperative role across the different stages of the entrepreneurial process, as the resources attained from social connections can have a positive and significant impact on business performance. The study evaluates the use of digital platforms by female entrepreneurs to obtained financial capital through their social relationships and firm performance of female owned ventures. This has been presented in this section with a theoretical review of literature which formed the basis for the hypotheses and conceptual framework. The followinghypothesis were formulated:

H1a: There is a positive relationship between bonding social capital in terms of online networks and access to financial capital by female entrepreneurs

H1b: There is a positive relationship between bridging social capital in terms of online networks and to access to financial capital by female entrepreneurs

H1c: Offline networks are positively related to financial capital for female entrepreneurs

H2a: The use of crowdfunding platforms by female entrepreneurs is positively related to access to financial capital

H2b: High social capital on online platforms is positively related to firm performance of Female entrepreneur’s

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Research Methodology/Paradigm

Previous chapters have provided a foundation to introduce the current work. The purpose of this research is to understand social capital in the digital age. Women have expressed the challenges experienced with accessibility of networks required to gain fundamental resources such as finance, knowledge, expertise and other embedded resources found in social capital, for improved business performance. Female entrepreneurship has been widely studied within the paradigm of social capital, however it is essential to understand this in the digital era context. As such, the results aim to provide more insight in the field of social capital and female entrepreneurship. In this chapter, the research philosophy, methodology and applied methods of the study are described. It is important to establish the research philosophy to assume a position on the world and the understanding thereof. This chapter describes the research philosophy, methodology and applied methods.

3.2 Research Design

3.2.1 Philosophy

The philosophical foundation for this research is positivism. This philosophical paradigm emerged as an objection to metaphysics, the belief that “only scientific knowledge can reveal the truth about reality” (Kaboub, 2008, p. 343). Positivism can be regarded as “scientific research, described as an extremely positive evaluation of scientific research” (Knipe & Mackenzie, 2006, p.2; Arghode, 2012, p.156). The aim of the positivism approach is to investigate or test a theory based on an observation and measurement in order to predict or control forces in the world (Knipe & Mackenzie, (Morgan, 2007), 2006). The positivism approach is more focused on objectivity, measurability, predictability, controllability; all obtainable by observation and experiment. Furthermore, the positivity paradigm believes in a single reality (Guba, 1990). According to Aliyu,

Bello, Kasim and Martin (2014), positivist paradigm is intended to illustrate the all that is genuine, real and factual happenings and most importantly can be studied and observed scientifically and empirically. Positivism is regarded as a research strategy and approach ingrained on the ontological principle (Aliyu, Bello, Kasim & Martin, 2014). Morgan (2007) identifies ontology, epistemology and methodology as three concepts rooted in the philosophy of knowledge. The ontological principle is founded on the premise that the truth and reality should not be independent of the viewer and observer (Aliyu, Bello, Kasim & Martin, 2014). An ontological orientation was applied to evaluate the true reality, whereby the participants become an integral part of the research process (Arghode, 2012). Epistemology is known as the philosophy of knowledge, closely related to ontology and methodology, defined as theory that "seeks to explain and predict what happens in the social world by searching for regularities and causal relationships between constituent elements" (Krauss, 2005, p.761). Epistemology further refers to "an established fact, theory, discipline or science of the technique process or foundation of knowledge, facts or information" (Aliyu, Bello, Kasim & Martin, 2014). The epistemology philosophy is rooted in the notion that there is a single truth to reality hence knowledge should be gathered systematically and explained in a structured way (Arghode, 2012). Therefore, this theory is used to attain this single truth prevalent in quantitative research.

3.2.2 Methodology

Methodology refers to a particular practice used by researcher to attain knowledge, hence it is essential to focus on the phenomenon under examination as this will determine the methodology

(Krauss, 2005). Methodology can be described as the analysis of assumptions, principles and procedures (Arghode, 2012). Knipe and Mackenzie (2006, p.5) define methodology as "both the collection of methods or rules by which a particular approach to research is undertaken". Quantitative research aims to "control, predict, explain and describe the scientific phenomenon" through observation and experimentation (Arghode, 2012, p.160). According to Knipe

and Mackezie (2006, p.3) positivism is closely aligned to “quantitative methods of data collection and analysis”. Quantitative research is based upon observation and these observations are turned into numerical values for statistical analysis; it uses “experimental methods and quantitative measures to test hypothesis” (Pandey & Patnaik, 2014, p.5744). The intention of quantitative research is to test theories or hypotheses deductively. Deductive reasoning refers to research results that are “generalised and deducted from a large sample” (Arghode, 2012, p.160). Deductive reasoning can be described as a logical chain of reasoning that follows sequential steps (Simon, 1996). A deductive research approach aims to gather and analyse data, based on a testable hypothesis.

Therefore, to test the identified hypothesis, quantitative research design will be applied for this study. A survey aims to collect data on a group of people identified. For the purpose of this study a survey was formulated with appropriate measures for each construct and in conjunction with literature review. Primary data was collected using a structured research instrument used to measure the impact of offline and online networks in the social context and its relationship with firm’s performance. This approach is appropriate as there are studies focusing on female entrepreneurship such as Alves, Galina and Macini (2017); Elama and Terjesen (2010); Lago, Manuel and Branco (2018) and Uche, Ayoub and Zouria (2018) that used a quantitative method based on the positivism approach to test hypothesis. The current study followed a similar approach, described in the philosophy and methodology section, guiding the principles underlying the data collection method.

3.3 Population and Sample

3.3.1 Population

Data was collected from a sample of entrepreneurs i.e. founder of business or business owners interchangeably referred to small and medium sized enterprises (SME) or new ventures. SMEs defined by Buculescu (2013, p.111) are businesses with a maximum of 250 employees and which the owner is

personally required to obtain existing funding. The target population for this research study is female entrepreneurs that own a business or in partnership with a male in their entrepreneurial venture. Angellist (Retrieved from https://angel.co/) was identified as a database due to its popularity, a platform used by entrepreneurs to register their start-up firms. The companies listed were further filtered to identify entrepreneurial ventures that are female owned in Gauteng and Western Cape. Thundafund (Retrieved from http://www.thundafund.com) and The People's Fund are two crowdfunding platforms in South Africa that were used to identify entrepreneurs. The projects listed on these sites are heterogeneous, ranging from arts to technology-based projects. The intention of this study was to focus on businesses that are more growth oriented. Therefore, technology-driven projects and relative amounts of money required to support these projects were considered. Projects that attracted minimal funds were discarded as they seemed to be small recreational projects. The technology based projects were further analysed to identify if the project were initiated by a female entrepreneur. The purpose of the study was to examine female entrepreneurs and challenges experienced by this population; it was desirable to collect data from female or female entrepreneurs partnering with males in their businesses.

3.3.2 Sample and sampling method

Sampling provides a procedure used to select a subset of the population; for the purpose of this study, a non-probability sampling technique is applied. Non–probability sampling, in many ways, is subjective as the researcher draws the sample from a large population based on their criteria without random selection (Tansey, 2007)The sampling unit is known and is based on the researcher's judgement and knowledge (Cooper & Schindler, 2006). Non-probability sampling was adopted as SMEs in developing countries for research and statistical reporting purposes tends to be a challenge; further consideration was that the focus of the study was female entrepreneurs (Behran, et al., 2012)The sampling technique for this study was convenient sampling, this method is based on a group or sub–group which is readily available. Convenient sampling is a type of non–probability sampling based on individuals known by the

researcher or readily available.The sample for this study was selected based on the availability of population elements. The entrepreneurial ventures were selected from the Angellist database (retrieved from https://angel.co/); according to the website, there are 1148 start–up companies withan active profile in Gauteng and the Western Cape region. The next task was to establish how many female owned ventures or female entrepreneurs partnering up with a male are. Further research was conduct on other social media platforms such as Linkedin, Instagram and Facebook were used to collect contact details of the entrepreneurs identified. A total of 40 projects were identified on Thundafund and The People's Fund after eliminating entrepreneurial projects that seemed to be recreational in nature and not technology based. .

Table 2: Profile of respondents

Variable	Description
Target population	Female owned entrepreneurial or partly owned female entrepreneurial venture
Population size	1148 listed company profiles 40 crowdfunding projects
Geographical location	Gauteng and Western Cape
Target sample size	106
Respondents	Female owned business

3.4 The research instrument

Social capital has been measured extensively as researchers sought to understand how offline social networks are formed. Over the years and developments in technology, there has been an increasing need to understand how and what kind of networks form online. The Internet Social Capital Scales (ISCS) was developed, a series of scales used to measure social capital in the internet context (Williams, 2006). The ISCS scale predominately focuses on measuring two dimensions: bridging and bonding. The items for the scale are derived from the work of Putman (2000), which he argued that bridging social

capital can offer a better linkage to external asset while bonding social capital is reliant on emotional support and can provide the entrepreneur with access to scarce resources (William, 2006). The questions are structured in such a manner that they related to a series of theories.

Primary data from a web-based survey tool, known as Qualtrics, was used to collect data. Web–based surveys allows one to reach a “unique population that exists primarily online, faster response time and higher response rate” (Chandna & Salimath, 2018, p. 166). Primary data was collected using a structured questionnaire that was administered to entrepreneurs. Primary data collection is regarded as information collected by the researcher to address the identified research problem (Malhotra & Birks, 2007). The research focused on the analysis and collection of primary data. For the purpose of this study, GEM’s definition of new ventures refers to nascent entrepreneurs – those who have committed resources to starting a business with no paid salaries, new business owners who have paid salaries for more than three months or have moved from nascent stage (Herrington, Kew & Mwanga, 2016/2017, p.21). To obtain the data, an open questionnaire was sent to the sample to complete via email and online platform such as Linkedin, Instagram and Facebook. The items were selected, based on previous study conducted (Tauscher & Laudien, 2018; Petruzzelli, Perronea & Roma, 2017; Baron & Markmann, 2003; Coy, Hanson, Pollack, Rutherford & Seers, 2016; Corvello, Grimaldi & Scarmozzino, 2016; Arzlanian, Elfring & Stam, 2014).The research instrument was administered to female owners of the entrepreneurial ventures.

3.4.1 Constructs and measures

3.4.1.1 Dependent variable

A) Firm performance: There are numerous metrics such as firm closure rates, sales and profit, return on assets, average number of employees or total balance sheet (Robb & Watson, 2012; Buculescu, 2013) used to measure business performance. Performance is multi-dimensional; hence it is beneficial to integrate different dimensions of performance (Sheperd &Wiklund &, 2005). Growth determinants refer to factors such

as resources, capacities and learning, generation of sustainable profits, involvement in networks, and finances accessed (Machado, 2016). Hence these growth determinants will be used to measure firm performance. The growth measurement is complex and may be inconsistent as the use of different growth measurements may provide different non–compatible results (Machado, 2016). The measure in this instance will be growth, viewed as a change in size within a specific timeframe (Machado, 2016). The variable is growth, viewed as a measurement of firm performance (Sheperd & Wiklund, 2005).

Entrepreneurs were asked to rate their business performance on a 5-point Likert scale (1= Strongly Disagree, 2= Disagree, 3= Neither disagree or agree, 4= Agree, 5= Strongly agree) on “I have managed to create employment for others in my business over the past years”, “Steady growth and stability in my business this year is my primary concern”, “Over the past year, my online networks have provided big business opportunities”, “I have actively used resources provided by my online networks in my business” and “In my business, rapid growth this year is my dominant goal”.

B) Financial capital: Resources and capabilities are considered to be critical drivers of any organisation and its effectiveness (Zoogah, Peng & Woldu, 2015). Yet access to finance is regarded as a major constraint to growth and development of new ventures despite the increasing importance of new ventures (Freel, Robson, & Wang, 2015). There are various funding methods, such as business angels, institutional investors, venture capitalists, corporations, government and foreign investors. Women in African countries often experience difficulty in accessing finance hence are mostly involved in sole proprietorship (Abor & Quartey, 2010). The role of finance is viewed as a critical element for the functioning of firms (Freel, Robson, & Wang, 2015).Therefore, financial capital refers to debt or equity financing, such as funding from banks, government initiatives, enterprise development, venture capital, angel investors and crowdfunding (Venter & Urban, 2015). According to Sheperd and Wiklund (2005), this may result in convergent and

discriminant validity due to a single – item measure. The variable created is access to financial capital, indicating that a network is able to provide finances.

Questions included family and personal networks, organisation and institutional networks, social media networks and web-based platforms on whether they provide access to financial capital. A sample question is "Organisation and institutional networks provide access to financial capital"; this was answered using a 5-point Likert scale ranging from "strongly disagree" to "strongly agree".

3.4.1.2 Independent variable

Social capital: This variable was assessed with using variables from Pollack et al, 2015b; (Coy, Hanson, Pollock, Rutherford, & Seers, 2016) measures were adapted for the purpose of this study. Social capital is known to create value in the form of actual and potential resources from the entrepreneurs' network of relationship (Arlanian, Elfring & Stam, 2013). High social capital can positively contribute to the entrepreneurs' success by providing access to finance, information and co-operation from networks, personal ties and referrals (Baron & Markman, 2000). The variable refers to the unique network (personal, digital, organisational). Entrepreneurs were asked to indicate whether they agreed on a 5-point Likert scale (1= Strongly Disagree, 2= Disagree, 3= Neither disagree or agree, 4= Agree, 5= Strongly agree) with 10 items: "The group of my personal contacts facilitated the start of my business", "The group of my personal contacts provide forums to discuss new business ideas", "The group of my personal contacts provide forums to discuss new business ideas", "Being a member of a business forum / organization facilitated the start of a new venture", "Being a member of a business forum / organization provide access to financial capital", "I often seek advice about business related matters from my personal networks", "Many people from personal network passed you business (referrals)", "Members of a digital platform passed you business (referrals)", "I have passed business (referrals) to my online network" and "Members of the social networking site passed you business (referrals)".

Online Bonding: This variable refers to 'strong ties', relationships between individuals derived from close friends, family and offline social groups that are based on trust (Brandtzaeg, Heim & Kaare, 2010). This is measured based on internet or online mediated communication. This variable was assessed using the ISCS measurement scale and refers to strong tie networks. Respondents indicated the extent to which they agreed on a 5-point Likert scale (1= Strongly Disagree, 2= Disagree, 3= neither disagree or agree, 4= Agree, 5= Strongly agree) with ten items that represent online bonding, questions such as "There are several people online I trust to help solve my problems", "There is someone online I can turn to for advice about making very important decisions", "The people I interact with online would put their reputation on the line for me", "The people I interact with online would be good job references for me", "The people I interact with online could get me into an exclusive organisation", "There is someone online I can turn to for advice about making very important decisions", "I do not know people well enough online to get them to do anything important", "I do not trust people who are a different race than me", "I do not trust people who live in a different country than me" and "The people outside of my immediate friends are not at all important".

Online Bridging: This variable is assessed with (William, 2006)measure, 'weak ties' which are relationships that are superficial, diverse and largely necessary to acquire resources. This is measured based on internet or online mediated communication. A 5-point Likert scale ranging from "Strongly disagree" to "strongly agree" measured responses on a twelve item scale related to online bridging. A sample item is, "Based on the people I interact with online, it is easy for me to hear about new job opportunities".

Crowdfunding: Crowdfunding as a variable is operationalised, based on the entrepreneurial projects listed on the crowdfunding platform and funding received by the entrepreneurs. LinkedIn and other social media connections have been used to measure the entrepreneurs' social capital in crowdfunding studies (Perrone, Petruzelli, & Roma, 2017).

The social capital and performance scales were adopted from previous research that measures the same construct in a different context. Items

selected are from different scales used in prior research in order to ensure reliability of the research instrument. The items were measured using a 5-point Likert scale ranging from 1 = strongly agree to 5 strongly disagree; respondents are required to rate, based on the statement. Prior research used three items to measure social ties, two items to measure network performance and 15 items to measure social competency.

Biographical data was collected which included variables such as platform type, industry, platform participants, revenue model, firm's age and other social media profiles (Tauscher & Laudien, 2018; Petruzzelli, Perronea & Roma, 2017; Corvello, Grimaldi & Scarmozzino, 2016; Arzlanian, Elfring & Stam, 2014).

3.5 Procedure for data collection

To test the hypotheses, we used Angellist as a database to collect data from the entrepreneurs with active company profiles. The sample follows the approach by Hartmann, Zaki Feldmann and Neely (2016), Angellist consists of a network of entrepreneurs. The purpose of the website is to increase visibility of the new ventures by creating a profile to attract potential investors, employees and relevant stakeholders. From the Angellist database, 1148 company profiles were listed in Western Cape (543) and Gauteng (605), the difficult was identifying which of the 1148 company profiles were female owned or with female partnership. The process of analysing and eliminating entrepreneurial ventures owned by males was done, a total of 106 were identified as female owned entrepreneurial ventures.

As mentioned above, collecting data in developing country from entrepreneurial ventures is a rather difficult undertaking. Therefore, data collection was not limited to Angellist. Online platforms are the centre of this study, hence it was appropriate to collect data from other digital platform, including, but not limited to crowdfunding platforms. Thundafund, a South African based crowdfunding platform was used as database to collect data. Entrepreneurial projects available and active on Thundafund and falling into the technology category were considered. There are many different entrepreneurial projects, ranging

from Arts to music, technology-based projects tend to be more growth-oriented and consequently, external funding from potential investors seems more probable. Therefore, entrepreneurial projects that fall within the technology category were sampled, resulting in 40 projects. As mentioned, data collection was not limited to these databases, entrepreneurial websites such as Lionesses of Africa, Destiny online magazine and Entrepreneur magazine were used to obtain profiles and individuals, they were contacted via social platforms.In this instance, Instagram, Facebook and LinkedIn proved to be viable digital platforms to connect with these female entrepreneurs. To improve raise response rates, researcher-respondent interaction and increasing questionnaires sent to respondents became essential. In total, there were 166 questionnaires captured on Qualtircs as responses, after analysing the raw data 71 responses were incomplete therefore could not be used and were discarded. A total of 95 responses were captured and recorded as completed; two of the respondents were excluded as they were male entrepreneurs with no female partnership in their venture. The surveys were on Qualtrics.com; of the 912 respondents that received the survey, 166 started the survey, however only 95 respondents completed the survey questionnaire. Two samples were removed as the respondents were both male and not partnering up with a female in their entrepreneurial venture. The final sample consisted of 93 respondents completed by female entrepreneurs or female entrepreneurs partnering up with a male in their business venture.

3.6 Data analysis and interpretation

According to Cooper and Schindler (2008, p.93), data analysis and interpretation is a process of identifying trends and patterns, applying statistical techniques and providing a summary of the data. This process allows one to interpret the findings in response to research questions. Other researchers view data analysis as editing, coding, transcription and verifying data (Birk & Malhotra, 2006). For data analysis and interpretation, the Statistical Package for the Social Sciences (or SPSSA), a computer program, was used.

3.6.1 Descriptive statistics

The empirical analysis was based on frequency tables, descriptive statistics, exploratory factor analysis and multiple linear regression analysis. The frequency table provided data on demographics of the sample and results of each question. The descriptive analysis was used to check and to describe the sample. Descriptive statistics provides information such as mean, standard deviation, necessary to normality. This data was tabulated, presenting data on the dependent and independent variables measured.

3.6.2 Correlation analysis

Correlation between values provides detail on the degree to which two variables are related to each other (Le Roux, 2005). The relationship between social capital variables and financial capital was analysed using correlation analysis. The Spearman's rho and Pearson's correlation coefficient are commonly used for correlation analysis, Pearson's uses a parametric formula to calculate coefficients (Hair et al. (2000:660, cited by Le Roux, 2005). Correlation coefficient ranges from - 1.0 to 1.0, perfect positive (+1) or negative (-1), zero (0) indicates no association. Correlation tests analyse the relationship between the dependent and independent variable.

3.6.3 Exploratory factor analysis

The purpose of exploratory factor analysis is used to determine "which items correlate stronger with each other than other variable" (Le Roux, 2005, p.167), known as a multivariate statistical technique. This analysis was used to reduce the data and to summarise it, calculating factor scores (Birk & Malhotra, 2007). The procedure to analyse this data involves evaluating each row in the table representing a variable, together with factor loading for a particular variable.

3.6.4 Multiple regression analysis

A multiple regression analysis was conducted to estimate the relationships between a dependent variable and one or more independent variable. A model

with more than one independent variable is referred to as multiple regression. To conduct the multiple regression model, SPPS software was used to estimate. According to Ervin and Long (2000, p.1), there are a number of assumptions that need to be met in order to use this model, hence "heteroscedasticity occurs when the variance of the errors varies across observations". Heteroscedasticity and multicollinearity are common in cross sectional data.

3.7 Validity and reliability

3.7.1 External validity

Validity refers to "the extent to which a concept is accurately measured in a quantitative study" (Raubenheimer, 2004, p. 66).The sample needs to relate to the general population, this means that the study needs to be transferable to other populations. Due to the nature of the study, construct validity was used to draw inferences based on constructs being studied (Raubenheimer, 2004). With reference to online bonding and bridging, the subscales should have positive correlation with concepts that are similar and when they are dissimilar the correlation should be near to zero (William, 2006).

3.7.2 Internal validity

Internal validity is threated by a number of factors that include: history, maturation, selection, instrumentation, statistical regression and experimental mortality (Gay & Airasian, 2000, cited by Onwuegbuzie, 2000, p.7). The internal validity of the instrument is directly dependent on the reliability of the scale, hence to ensure validity and reliability, an analytic procedure was applied to ensure that the internal consistent items and validity of the scale is measured (Raubenheimer, 2004). Due to the unique nature of this study, the instrument should be reproduced under similar methodology to improve internal validity and reliability. This will improve the internal consistency and validity of the items.

3.7.3 Reliability

Reliability can be defined as “the extent to which results are consistent over time and an accurate representation of the total population under study is referred to as reliability and if the results of a study can be reproduced under a similar methodology, then the research instrument is considered to be reliable” (Joppe, 2000, p.1, cited by Golafshani). Cronbach alpha test was used to determine internal reliability; this measures the internal consistency of the variables. In the case of multidimensional scales, there is a possibility of convergent validity and discriminant validity. This refers to the extent to which the subscale measures the same uni-dimensional construct or different sub-scales measure different constructs (Raubenheimer, 2004). An item selection procedure was implemented to maximise the scale reliability and validity. According to Raubenheimer (2004), the reliability criteria can be achieved by applying exploratory factor analysis, examining uni-dimensionality of these scales and thereafter assessing the reliability of the scale through internal consistency analysis. Exploratory factor analysis was applied to remove items that are least reliable in order to increase the sub-scales’ alpha.

In this chapter, research design methods and context were presented. The research design selected is appropriate for this study as mentioned above. Quantitative research allows for data collected in form of survey questionnaire to be analysed using statistical tests and models. The following chapter provides a detailed overview of the data and reflects findings using statistical methods.

CHAPTER 4: PRESENTATION OF RESULTS

4.1 Introduction

In order to test hypotheses formulated in chapter 2, this chapter intends to present the analysis of the data, followed by a discussion of the research findings. This chapter comprises the presentation, analysis and interpretation of the findings, based on the study. The purpose of this study was to examine the entrepreneur's social capital that manifests itself on online platforms and offline networks and which provides better access to embedded resources necessary to enhance business performance of women-owned firms. Data was obtained from an online administered questionnaire, completed by 93 entrepreneurs (n=93). A total of 912 questionnaires were distributed, after cleaning the raw data only 93 questionnaires were usable for this study, based on the criteria discussed in previous chapters. Seventy-one (71) questionnaires were incomplete questionnaires, two (2) were male entrepreneurs, however, they were not partnering up with females in their firms hence were removed from the analysis.

The questionnaire comprised two sections and data gathered is presented as follows:

- The first section comprised biographical data such as gender, race, firm age, platform type, founder, number of employees and industry.
- The second section comprised data obtained from analysis of bonding social capital, bridging social capital, social capital, financial capital and firm performance that was examined and the association between the variables.

Descriptive statistical analysis was applied to measure frequency and percentages to understand the questions in the survey.

4.2 Demographic profile of respondents

This section describes the respondents' demographic variables of the sample and to assess if any influence on the research findings. The data is not central to the study, however it is important to contextualise the findings and to provide appropriate recommendations. The demographic data consists of gender, race, firm age, platform type, founder, number of employees and industry.

4.2.1 Respondents' race

Participants were asked to select the race category appropriate to them (see Figure 1). Three in every four respondents were Black, followed by 18% White and 5% Indians and 1% Coloured.

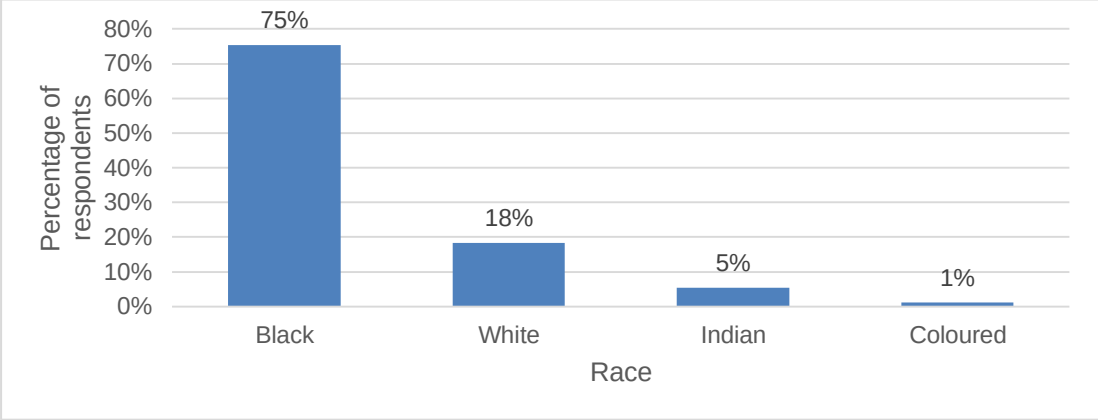


Figure 2: Respondents' race

4.2.2 Respondents' gender

Participants were asked to select their gender next to the relevant option provided (male or female), further they were asked if they were partnering up with a female in their business venture. It can be noted that 94.6% of the respondents were female; the other 5.4% was made up of male respondents who are partnering with female entrepreneurs. Of the 94.6% female respondents, 32.3% were also partnering with other women.

Table 3: Cross-tabulation of Respondent gender and whether they are partnering up with a female in the business venture.

% of Total		Are you partnering up with a female in the business venture?			Total
		Yes	No	No, with a male	
Your gender	Male	5.4%			5.4%
	Female	26.9%	48.4%	19.4%	94.6%
Total		32.3%	48.4%	19.4%	100.0%

4.2.3 Firm's age

Participants were asked to select the option that best describe their firm's age (see figure 2). Based on the data, only 14% of the businesses represented in the sample were less than 12 months old, 25% were 13 – 36 months old while the other 61% were older than 36 months.

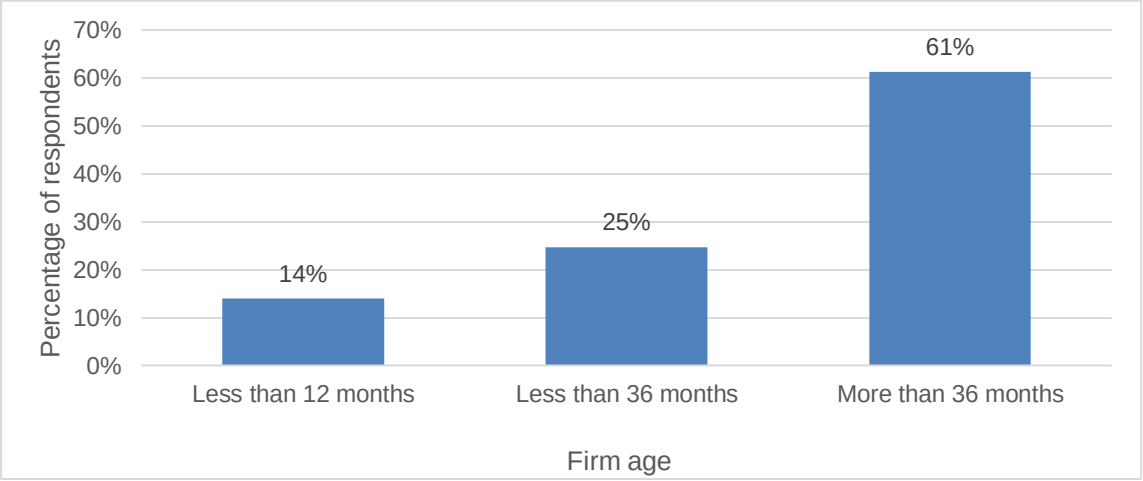


Figure 3: Firm age

It can be noted that only 14% of the businesses represented in the sample were less than 12 months old, 25% were 13 – 36 months old while the other 61% were older than 36 months.

4.2.4 Social media platform

Participants were asked to select the social media platform most actively used by the entrepreneur in the past. Options were provided to the entrepreneur as shown in figure 3. Facebook was by far the most popular online platform used in

the past, followed by Twitter (39%), and LinkedIn (37%). Other platforms include Instagram with most of the participants specifying this platform as mostly used, 14 out the 22 specified that Instagram had been used in the past.

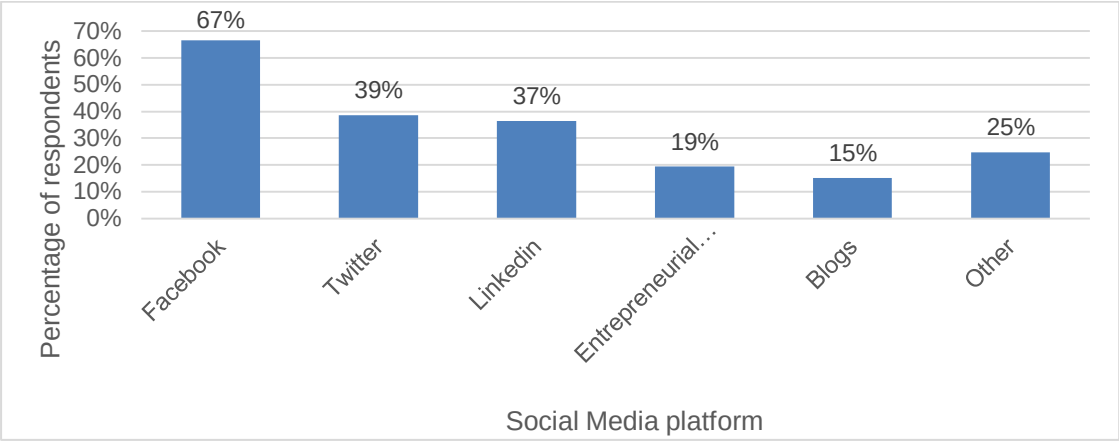


Figure 4: Platforms

4.2.5 Number of employees

Participants were asked to select the number of employees employed in the firm (see Figure 4). Based on the results, the participants indicated that they had fewer than 10 employees (88%) in their firm. Only 10% had 10–50 employees and 2% had more than 100 employees.

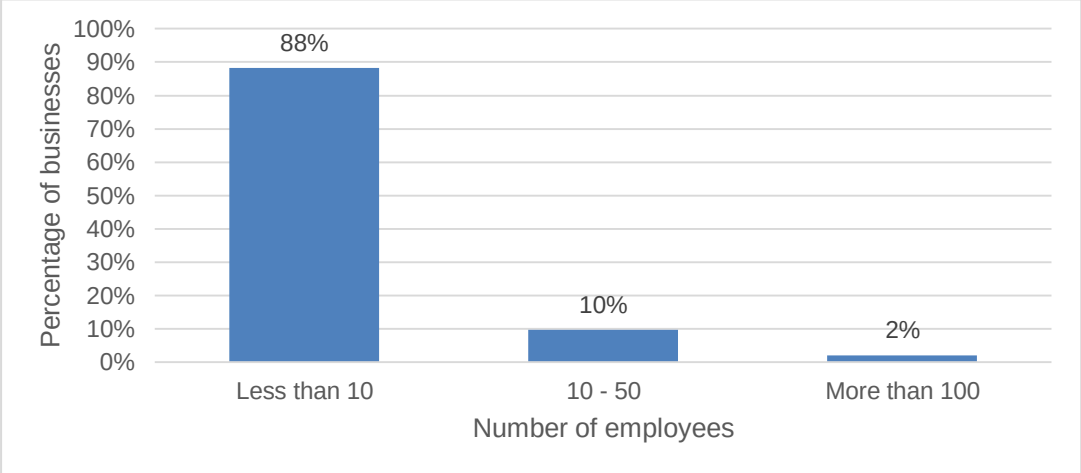


Figure 5: Number of employees

4.2.6 Participants' industry

Participants were asked to select the industry in which the firm operates (see table 2). A proportion of 19% of the sample operate in wholesale / retail, 18% of the sample operates in the professional services followed by information / communication technology at 11% of the sample.

Table 4: Industry

Wholesale / Retail	19%
Professional Services	18%
Information/ communication technology	11%
Agriculture	4%
Transportation	2%
Mining	1%
Finance	1%
Other (please specify)	42%
Not indicated	1%

4.3 Results

4.3.1 Exploratory Factor Analysis

To analyse the data, an exploratory factor analysis was generated to assess all constructs of interest in this study (see table 3 and 4). Two assumptions were

tested using SPSS: a) linearity between variables which was evaluated using a correlation matrix; b) sampling adequacy, which used Kaiser–Meyer–Olkin (KMO) measure. All the Kaiser-Meyer-Olkin Measures of Sampling Adequacy (KMO) values were greater than the minimum require value of at least 0.5. The KMO measures the index of the linear relationships between the variables, therefore 0.8 is considered to be good and anything below 0.5 is considered unacceptable. It is important to note that firm performance is considered miserable. Based on KMO measures, this implies that the sample size was sufficient to run factor analysis. The Bartlett's Test of Sphericity was significant on all the constructs, which shows that the items within each construct were correlated to each other, as required for factor analysis.

Table 5: KMO and Bartlett's Test

Online Bonding		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.763
Bartlett's Test of Sphericity	Approx. Chi-Square	207.431
	df	28
	Sig.	.000
Social Capital		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.674
Bartlett's Test of Sphericity	Approx. Chi-Square	360.417
	df	45
	Sig.	.000

Financial Capital		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.640
Bartlett's Test of Sphericity	Approx. Chi-Square	44.542
	df	3
	Sig.	.000
Firm Performance		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.501
Bartlett's Test of Sphericity	Approx. Chi-Square	60.245
	df	3
	Sig.	.000
Crowdfunding Platform		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.781
Bartlett's Test of Sphericity	Approx. Chi-Square	360.167
	df	15
	Sig.	.000
Bridging online		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.868

Bartlett's Test of Sphericity	Approx. Chi-Square	827.896
	df	45
	Sig.	.000

The Online Bonding construct retained two factors instead of the one factor that had been hypothesised. This was after removing items, “B0_1: There are several people online I trust to help solve my problems: and “B0_7: I do not know people well enough online to get them to do anything important” due to low communality values ($p<0.3$). The factors are Called Online Bonding Factor 1 and Online Bonding Factor 2. The retained factors explain 42% of the variance in the initial items.

Social Capital retained three factors that explained 56% of the variance in the original construct.

Firm Performance and Financial Capital retained one factor each. The factors explained 47% and 43% respectively. Item “FPIP1: I have managed to create employment for others in my business over the past years” and item “FPIP2: Steady growth and stability in my business this year is my primary concern” were removed from the Firm Performance construct since due to low communality values ($p<0.3$) values ($p<0.3$). While item “FP1: “Family and personal networks provide access to financial capital” from the Financial Capital construct.

Crowdfunding platform construct retained one factor which explained 57% of variance in the initial items. The component is retained as it explains at least 5% to 10% of the total variance.

The online bridging construct retained two factors after removing items “BO3: Interacting with people online makes me interested in things that happen outside of my town” for loading on more than on factor and item “BO8: I interact with people online who are mostly the same gender as me” due to low communality values ($p<0.3$).

Table 6: Validity and Reliability results

			Factor Loading				
			Factor 1	Factor 2	Factor 3	Total Variance Explained	Cronbach's Alpha
Bonding Online	Access to limited resources	BO_3 The people I interact with online would put their reputation on the line for me	.765			29%	.812
		BO_5 The people I interact with would online share their last dollar with me.	.705				
		BO_6 The people I interact with online could get me into an exclusive organization.	.704				
		BO_4 The people I interact with online would be good job references for me	.657				
		BO_2 There is someone online I can turn to for advice about making very important decisions.	.587				
	Out - groupt ension	BO_8 I do not trust people who are a different race than me.		.702		13%	.723
		BO_9 I do not trust people who live in a different country than me		.698			
		BO_10 The people outside of my immediate friends are not at all		.662			

		important					
	Total					42%	
Social Capital	Offline network	SC2 The group of my personal contacts provide forums to discuss new business ideas	.766			31%	.772
		SC1 The group of my personal contacts facilitated the start of my business	.708				
		SC7 Many people from personal network passed you business (referrals)	.691				
		SC3 The group of my personal contacts provided access to financial resources	.606				
		SC6 I often seek advice about business related matters from my personal networks	.435				
	Online network	SC10 Members of the social networking site passed you business (referrals)		.919		14%	.827
		SC8 Members of a digital platform passed you business (referrals)		.763			
		SC9 I have passed business (referrals) to my online network		.705			
	Professional	SC4 Being a member of a business forum / organisation facilitated the			.883	11%	.807

	networks	start of a new venture					
		SC5 Being a member of a business forum / organisation provide access to financial capital			.776		
						56%	
Financial Capital		FP4 Web – based platform provide access to financial capital	.749				
		FP3 Social media network provide access to financial capital	.687			43%	.665
		FP2 Organisation and institutional networks provide access to financial capital	.498				
Firm Performance		FPIP4 I have actively used resources provided by my online networks in my business	.893				
		FPIP3 Over the past year, my online networks have provided big business opportunities	.774			47%	.593
		FPIP5 In my business, rapid growth this year is my dominant goal					
Crowdfunding platform		ECF3 Members to a crowdfund platform provide access to substantial financial capital	.821			57%	.887
		ECF2 Members to a crowdfund platform provide information on	.810				

		other users					
		ECF1 Members to a crowdfund platform provide access to business opportunities	.808				
		ECF5 Members to a digital platform provide access to complementary product / service	.720				
		ECF4 Members to a digital platform provide access to supplier	.711				
		ECF6 Members to a digital platform provide access to larger customer base	.645				
Bridging online	Contact with diverse networks	BO12 Interacting with people online reminds me that everyone in the world is connected	.994			61%	.942
		BO9 I interact with people online from different racial or ethnic backgrounds	.960				
		BO11 Interacting with people online makes me feel connected to the bigger picture	.905				
		BO10 Interacting with people online makes me feel like part of a larger community	.797				
		BO7 I interact with people online who are members of a religion	.667				

		different than mine					
		BO5 Talking with people online makes me curious about other places in the world.	.583				
		BO6 I interact with people online who are from different economic backgrounds than me	.581				
	Linkageto external assets	BO2 The people I interact with online could help me get good information about new opportunities		.995		11%	.835
		BO1 Based on the people I interact with online, it is easy for me to hear about new job opportunities.		.840			
		BO4 Interacting with people online makes me want to try new things		.588			
						72%	

4.3.2 Reliability of scale

Exploratory factor analysis is applied in order to identify items that may be problematic and eliminate them in in favour of stronger ones (William, 2006). The theory clearly distinguishes between the bridging social capital and bonding social capital as two concepts. Some of the variables were dropped when they did not scale with the others. Further, variables were then sub-clustered in accordance to the Internet Social Capital Scale (ISCS) and theory. In assessing the measurement properties of the data, most of the item constructs show composite reliability of greater than 0.7. The Cronbach's alpha values show that all the constructs and sub-constructs had alpha values greater than the required minimum of 0.7 and meet the traditional benchmark (0.7) (Henard & Stanko,

2017), with the exception of Financial Capital (α = 0.665) and firm performance (α = 0.593). Cronbach's Alpha (α) refers to the internal consistency of the scale, therefore high values are better as it reflects a good internal consistency. Although financial capital and firm performance have a lower than the required Cronbach's Alpha values, they could still be combined together to create a summated scale for each construct. In some instances multi item scales can be averaged and used with single item measure in the regression model (Fornell & Larcker, 1981). Hence, reliability of single item will result in probably low or at worst unknown results (Gliem & Gliem, 2003).

The summated scale was computed by calculating the average of items retained within a factor/ construct. The descriptive statistics shown in table 3 are based on the summated scale.

Table 7: Pearson's correlation

	Pearson's Correlations									
	1	2	3	4	5	6	7	8	9	10
1.Bonding Online (Access to limited resources)	1									
2.Bonding Online (out-group tension)	-.195	1								
3.Social Capital (offline networks)	.044	-.009	1							
4.Social Capital (Online networks)	.509**	.004	.303**	1						
5.Social Capital (Professional networks)	.168	.094	.295**	.189	1					

6.Bridging Online (contact with diverse networks)	.253*	-.126	.292**	.336**	.068	1				
7.Bridging Online (linkage to external assets)	.365**	-.106	.152	.389**	.067	.623**	1			
8.E Crowdfunding platform	.418**	.042	.268**	.380**	.242*	.303**	.580**	1		
9.Financial Performance	.209*	.047	.342**	.292**	.389**	.297**	.235*	.394**	1	.
10.Firm Performance	.428**	-.019	.181	.531**	.320**	.338**	.443**	.400**	.326**	1

Strongly disagree = 1 and Strongly agree = 5

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 8: Descriptive Statistics

	Descriptive Statistics	
	Mean	Std. Deviation
1.Bonding Online (Access to limited resources)	2.79	1.00
2.Bonding Online (out-group tension)	2.14	1.04
3.Social Capital (offline networks)	3.19	1.03
4.Social Capital (Online networks)	3.25	1.20
5.Social Capital (Professional networks)	2.37	1.30
6.Bridging Online (contact with diverse networks)	4.13	1.02

7.Bridging Online (linkage to external assets)	3.84	0.98
8.E Crowdfunding platform	3.00	1.01
9.Financial Performance	2.37	1.00
10.Firm Performance	3.43	0.94

Strongly disagree = 1 and Strongly agree = 5

Table 4 displays the results of the descriptive analysis. Bridging online (contact with diverse networks) was the highest rated construct (mean = 4.13). On average entrepreneurs agreed that they engage with people outside their close knit or from heterogeneous groups. The same holds for Bridging Online (linkage to external assets) with a mean = 3.84. By contrast Bonding Online (out-group tension) (mean = 2.14) was the lowest rated construct, entrepreneurs disagreed that engaging with external groups does not reap emotional support. Social capital (online networks) was relatively high with entrepreneurs mostly agreeing that online networks provide some form of access to resources. Offline networks consisting of the entrepreneurs' personal contacts are likely to provide referrals and access to social capital resources.

4.3.3 Multiple Regression

Multiple regression was conducted to assess whether financial capital (the dependent variable) can be predicted based on Bridging Online (contact with diverse networks), bridging online (linkage to external assets), bonding online (access to limited resources), bonding online (out-group tension), social capital (offline networks) and crowdfunding platform. This allows for a relationship between multiple independent variables and a single dependent variable. Independence of observation is tested statistically using the Durbin–Watson test, used to detect serial correlation. Based on the results, the independence of residual, as assessed by Durbin–Watson was 1.666, implying that there is no

correlation between residuals as the value is approximately or closer to 2 hence can be accepted. The results are shown below.

Table 9: Model Summary - Financial Capital as the dependent variable

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.497[a]	.247	.195	.89723	1.666

a. Predictors: (Constant), Social_Capital_Factor1, Bonding_Online_Factor2, Bridging_Online_Factor2, Bonding_Online_Factor1, Bridging_Online_Factor1, Crowdfunding_platform Crowdfunding platform

b. Dependent Variable: Financial Capital

Results on the Model summary show that Bridging Online (contact with diverse networks), Bridging Online (linkage to external assets), Bonding Online (access to limited resources), Bonding Online (out-group tension), social capital (offline networks) explain 24.7% of variation in financial performance as shown by a p-value of 0.247.

The ANOVA (table 6) shows the results, testing whether there is a linear relationship between at least one of the independent variables and Financial capital.

Table 10: ANOVA - Financial Capital as the dependent variable

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	22.734	6	3.789	4.707	.000[b]
	Residual	69.233	86	.805		

	Total	91.967	92			
a. Dependent Variable: Financial Capital						
b. Predictors: (Constant), Social_Capital_Factor1, Bonding_Online_Factor2, Bridging_Online_Factor2, Bonding_Online_Factor1, Bridging_Online_Factor1, Crowdfunding_platform						

Results revealed that at least one of the independent variables is significant in predicting financial capital since the p-value was less than 0.05. The criterion widely used as a standard in behavioural science is α = .05 when the result is statistically significant (Cohen & Cohen, 1983). The results in the coefficients table 7 shows which variables are significant.

Table 11: Coefficients

Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.111	.557		.200	.842		
	Crowdfunding platform	.311	.125	.316	2.488	.015	.544	1.837
	Bonding_Online (access to limited resources)	.075	.108	.075	.698	.487	.756	1.323
	Bonding_Online_(out-group tension)	.060	.093	.063	.647	.519	.925	1.081
	Bridging_Online_(contact to diverse network)	.207	.123	.211	1.676	.097	.552	1.812

	Bridging_Online_linkage to external assets	-.136	.147	-.133	-.925	.357	.424	2.356
	Social_Capital_offline networks	.206	.099	.213	2.091	.040	.844	1.185
a. Dependent Variable: Financial Capital								

4.4 Results pertaining to Hypothesis 1

To fulfil the requirements of multiple regression, the following assumptions were tested. The Scatter plot shows a linear relationship, further testing for homoscedasticity was conducted. There was homoscedasticity, as assessed by visual inspection of a scatter plot. Multicollinearity was tested to ensure that two or more independent variables are not highly correlated with each other. The VIF simply refers to the Tolerance value that is greater than 0.1, hence we can be fairly confident that there is no problem with collinearity in the data set. To determine statistical significance, the errors in prediction and the residuals need to be normally distributed. Assumption of normality is produced using a histogram, the standardised residual appears to be approximately normally distributed. Further to validate this result, a P-Plot above is perfectly aligned to the diagonal line therefore indicating that the residual are close enough to normal. The charts show that the assumptions for regression are met.

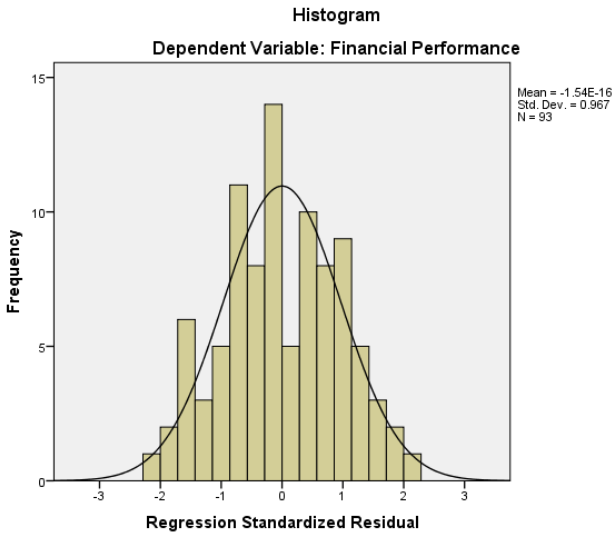


Figure 6: Histogram of Financial Performance

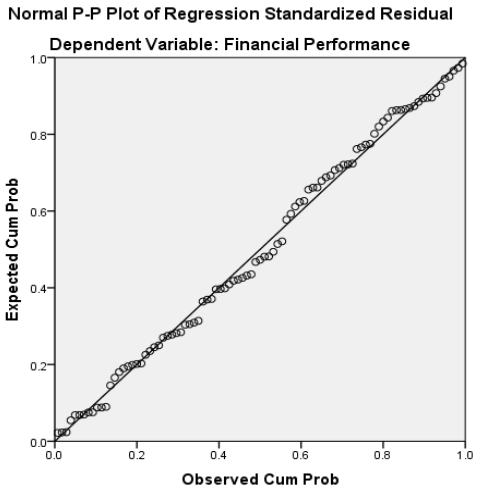


Figure 7: Normal P-Plot of Financial Performance

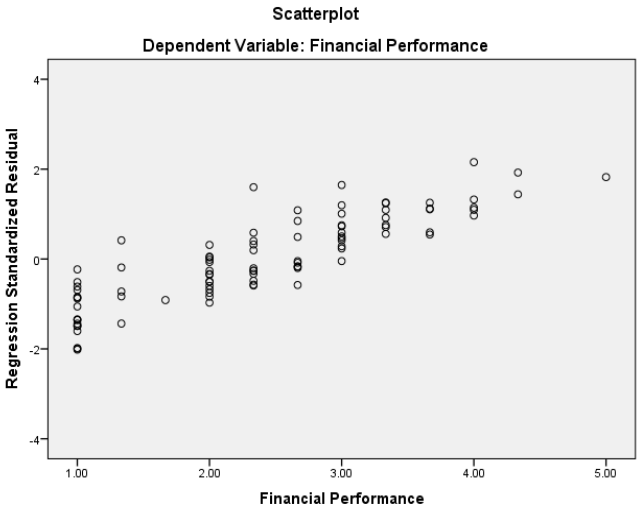


Figure 8: Scatter Plot of Financial Performance

- H0: There is no relationship between bonding social capital of the entrepreneurs' online network and financial capital for female entrepreneurs.
- H1a: Bonding social capital of the entrepreneurs' online network will be positively related to financial capital

This result shows that there is no significant relationship between bonding online (access to limited resources) (B = 0.075, β = 0.075, p-value = 0.487) and financial capital since the p-value was greater than 0.05.

It can also be noted that there is no significant relationship between bonding online (out-group tension) (B = 0.060, β = 0.063, p-value = 0.519) and financial capital. The relationship is insignificant since the p-value was greater than 0.05.

Based on these two results, it can be concluded that there is no relationship between an entrepreneurs' online network and ability to gain financial capital.

- H0: There is no relationship between bridging social capital of the entrepreneurs' online network and financial capital for female entrepreneurs.
- H1b: Bridging social capital of the entrepreneurs' online network is positively related to financial capital for female entrepreneurs.

-

This result shows that there is no significant relationship between bridging online (contact to diverse networks) (B = 0.270, β = 0.108, p-value = 0.211) and financial capital. The relationship is insignificant since the p-value was greater than 0.05.

It can also be noted that there is no significant relationship between bridging online (linkage to external assets) (B = -0.136, β = -0.133, p-value = 0.357) and financial capital. The relationship is insignificant since the p-value was greater than 0.05.

Based on these two results, it can be concluded that there is no relationship between bridging social capital and financial capital for female entrepreneurs.

- H0: There is no relationship between offline networks and financial capital for female entrepreneurs
- H1c: Offline networks are positively related to financial capital for female entrepreneurs

Results in the coefficients table shows that there is a significant and positive relationship between offline networks (B = 0.206, β = 0.213, p-value = 0.040) and financial capital. The relationship is significant since the p-value was less than 0.05 and is positive since the coefficient of offline networks was greater than zero.

Based on these two results, it can be concluded that there is a relationship between offline networks and financial capital for female entrepreneurs. In this case, the null hypothesis is rejected

- H0: There is no relationship between the use of crowdfunding platforms and financial capital for female entrepreneurs.
- H2a: The use of crowdfunding platforms by female entrepreneurs is positively related to financial capital

Results in the coefficients table shows that there is a significant and positive relationship between the use of crowdfunding platforms (B = 0.311, β = 0.316,

p-value = 0.015) and financial capital. The relationship is significant since the p-value was less than 0.05 and is positive since the coefficient of crowdfunding platform was greater than zero. This implies that the null hypothesis is rejected in favour of the alternative hypothesis. It is therefore concluded that the use of crowdfunding platforms by female entrepreneurs is positively related to financial capital.

4.5 Results pertaining to Hypothesis 2

To test hypotheses 2b, multiple regression was conducted with firm performance as the dependent variable and based on multiple independent variables under the Social Capital sub-constructs. Multiple regression is appropriate as the model allowed for the relationship between multiple independent variables and outcome variable to be tested. It is necessary to test for independence of observations statistically, using the Durbin–Watson test, in order to detect possible autocorrelation. There is independence of residuals, assessed by a Durbin–Watson statistic of 1.844, hence no correlation between the residual as the value is close to 2.

Table 12: ANOVA for Independent Variables

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.577[a]	.333	.311	.78426	1.844

a. Predictors: (Constant), Social_Capital_Factor3, Social_Capital_Factor2, Social_Capital_Factor1

b. Dependent Variable: Firm Performance

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	27.340	3	9.113	14.817	.000[b]
	Residual	54.741	89	.615		
	Total	82.081	92			
a. Dependent Variable: Firm Performance						
b. Predictors: (Constant), Social_Capital_Factor3, Social_Capital_Factor2, Social_Capital_Factor1						

It is essential to check for multicollinearity, based on the results below, the IF is greater than 0.1, hence we can fairly assume that there is no problem with collinearity in this particular data set.

Table 13: Coefficients for Independent Variables

Coefficients[a]								
Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.861	.312		5.964	.000		
	Social_Capital_offline networks	-.036	.086	-.040	-.424	.672	.850	1.177

	Social_Capital_online networks	.393	.072	.498	5.452	.000	.898	1.114
	Social_Capital_professional networks	.172	.066	.237	2.604	.011	.902	1.108
a. Dependent Variable: Firm Performance								

To meet the requirements of multiple regression, each independent variable should be linearly related to the dependent variable. Below, a scatter plot reflects that there is homoscedasticity as the residuals are evenly spread. The histogram and P-P Plot are used to check for normality, based on the figure, histogram appears to be approximately normally distributed. Further, all the points are aligned perfectly along the diagonal line on the P-P Plot chart.

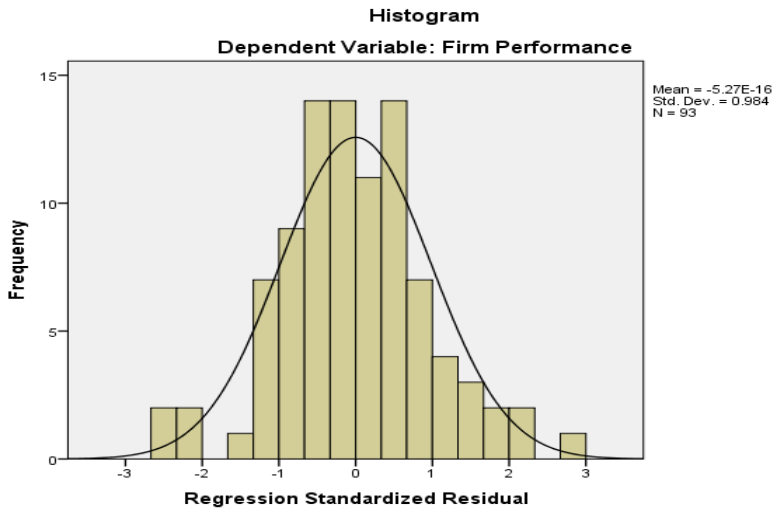


Figure 9: Histogram of Firm Performance

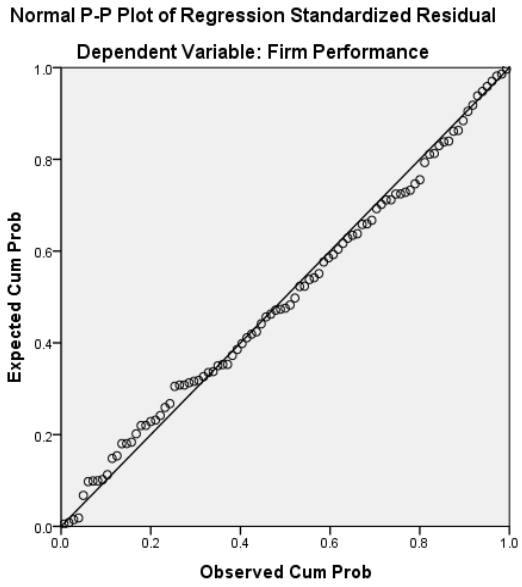


Figure 10: Normal P-Plot of Firm Performance

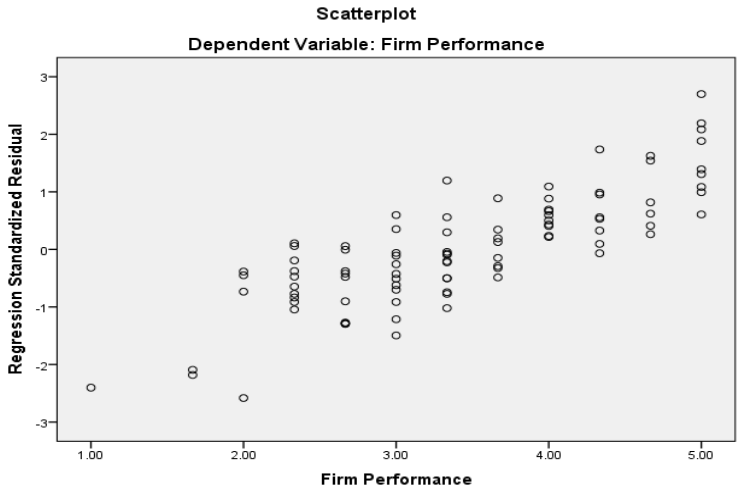


Figure 11: Scatter Plot of Firm Performance

The charts above show that the assumptions for regression are met.

- H0: There is no relationship between high social capital on online platforms and firm performance of female entrepreneur's
- H2b: High social capital on online platforms is positively related to firm performance of female entrepreneur's

The results show that social capital (online networks)(B = 0.393, β = 0.498, p-value = 0.000) and social capital (professional networks) (B = 0.172, β = 0.2797, p-value = 0.011) were positively related to firm's performance since the

coefficients for the independent variables were greater than zero and the p-values were less than 0.05.

There was however no significant relationship between social capital (offline networks) (B = -0.036, β = -0.040, p-value = 0.672) and firm's performance since the p-value was greater than 005.

Based on the results for the three sub-constructs, it can be concluded that High social capital on online platforms is positively related to firm performance of Female entrepreneurs.

4.6 Summary of the results

In this chapter, data analysis methods and results were presented. The findings were discussed in relation to the hypotheses formulated in the literature review by applying statistical tests and models. Data findings were described and presented in various tables and graphs. In the next chapter, the main finding is discussed and results interpreted with reference to literature. The limitations to this study will be discussed further. .

CHAPTER 5: DISCUSSION OF THE RESULTS

5.1 Introduction

This chapter discusses and summarises the research findings in relation to the extensively developed literature review and the research questions formulated. The aim of the research was to examine the entrepreneur's social capital manifesting itself on online platforms and offline networks and which provides better access to embedded resources necessary to enhance business performance of women owned firms. The findings are discussed below and reported in two main sections

- Demographic profile of participants
- Discussion pertaining to hypothesis

5.2 Demographic profile of respondents

The challenges experienced in collecting data have already been addressed in chapter 3. Due to the low response rate, the questionnaire was distributed using the anonymous link to individuals on Instagram, Facebook, female entrepreneur networking forums and other personal contacts in order to yield a relatively moderate sample size. The racial composition of the data is predominately black female (75%) followed by white female (18%). Further, the female entrepreneurs were requested to specify partnership in their business ventures. Female entrepreneurs are seen to partner up with male entrepreneurs in their business ventures to gain access (Dautzenberg, 2012); 9% of the female participants were partnering up with other female entrepreneurs and 48.4% were not in any form of partnership. In fact, only 24, 8% of the female participants, inclusive of the male participants, indicated that they were partnering with males in their business. Studies have shown that women–owned enterprises are likely to operate in the informal sector (Locke & Wellalage, 2017). GEM (Herrington, Kew, & Mwang, 2016-2017, p. 34), reported that entrepreneurs in South Africa tend to operate in Wholesale/retail

and Professional services with a small percentage in Information/communication and the technology sector. It was important to further analyse the data indicated under 'Other' column as some of the entrepreneurs indicated the business type. 18.4% of the participants are involved in mining, 23, or 68% in Professional services and 5, or 2% in Wholesale/retail. This is a true reflection of the South African entrepreneurial landscape as reported in the GEM. The purpose of including social media presence in the demographic data was to substantiate findings based on literature, as a strong social media presence can contribute to the investors funding projects listed on crowdfunding platforms (Brem, Cheng, Cheng, Kraus, 2016). Facebook (67%), Twitter (39%), LinkedIn (37%) and Instagram (15,8%) seemed to be the popular social media platforms used by participants to connect at individual, organisational and social level.

This study examines the entrepreneurs' social capital on online platforms and offline networks. The discussion comes from the literature review summarising social capital properties online and offline that lead to enhanced business performance of women owned firms. Returning to the hypotheses stated and findings in literature, this section is structured in accordance with the hypotheses.

5.3 Discussion pertaining to Hypothesis 1

This study extends on previous knowledge on the role of social capital in the entrepreneurial process, social capital is the ability of the entrepreneur "to work their way in to relationship networks which can provide them with essential resources" (Camerero, Carrion, Cillian & Gutierrez, 2018, p.2). Social capital is crucial in identifying opportunity and seizing business opportunities (Blok, Gulikersa & Lansa, 2015). Financial capital is identified as a critical resource to any entrepreneurial venture; female entrepreneurs tend to experience difficulty in accessing financial capital compared to their male counterparts (Rooks & Solano, 2018). This difficulty is apparent in developing countries as female led ventures tend to under–perform or result in failure, hence hindering female entrepreneurs from reaching their full potential (Lindvert, Patel & Wincent,

2017). Song (2015) argues that for a firm to acquire competitive advantage; financial, human and social capitals are essential resources. Further, the entrepreneur should “invest time and effort in building social capital as this brings opportunities to transform human and financial capital to profit in return” (Song, 2015, p.121).

Both bridging and the bonding of social capital are important aspects to the entrepreneurial process (Blok, Gulikers, & Lans, 2015). Both forms of social capital are said to bring novelty benefits essential for the entrepreneur (Arzlanian, Elfring & Stam, 2014). Social capital is a source embedded in social structures and has been applied to a variety of pro–social behaviours, such as online interactions (Lin, 2011). The embedded resources in these social structures are resources required by female owned businesses to overcome barriers associated with accessing funds from formal financial services and reliance on male entrepreneurs for internal or informal financing (Locke & Wellalage, 2017). Sub-Saharan Africa is characterised by underdeveloped financial and legal systems, the formal borrowing rate is lower than developed countries; further, women-owned businesses are not served or underserved by financial institutions (Rooks & Solano, 2018). With limited access to business associates, formal networks and discriminatory attitudes, female entrepreneurs tend to seek small capital, increasing chances of low returns, and greater probability to fail (Lindvert, Patel & Wincent, 2017). Social capital becomes an influential tool necessary to help achieve business objectives by leveraging from a wide variety of networks to gain access to resources (Surangi , 2018).

Some studies suggested that the use of the internet and new media helped to further develop both bridging social capital and bonding social capital (Brandtzaeg, Heim, & Kaare, 2010). The internet facilitates the creation of new relationships through new platforms for online sociability and social networking sites (Kwan & Skoric, 2011). Bonding and bridging social capital can facilitate the start of a business venture and encourage business growth (Blok, Gulikers, & Lans, 2015). Bonding social capital refers to the relationship between people in a group who know each other well and bridging social capital refers to a diverse group of people from different backgrounds (Camarero-Izquierdo,

Gutierrez- Cillan, & Hernandez - Carrion, 2019). Strong bonding social capital can provide the entrepreneur with access to finance, professional advice and human capital during the start-up phase while bridging social capital can provide new information from a range of sources making it easier to identify new opportunities (Blok, Gulikers, & Lans, 2015). Research suggests that the broader the entrepreneurs' social network, the more likely they are to receive funding from investors (Song, 2015, p. 121).

Digital technology allows "unprecedented flexibility to connect different resources and actors" (Saarikko, 2016, p.179). Platform technology provides small firms with the ability to build, innovate and grow as the platform mediates the flow of information (Hsieh & Wu, 2018). Therefore, the online environment can potentially provide similar quality and quantity of social capital compared to offline social capital (Corten & Norbutas, 2018).

Based on the results of the research, it revealed that there is no positive relationship between online bonding capital or online bridging social capital and access to financial capital. This finding is important because it suggests that, despite the ability to connect with people at individual, organisational and social level via the web to exploit social networks through diverse social network ties in an online environment, this has not allowed female entrepreneurs to gain meaningful relationships necessary to access financial capital as expressed. Hypothesis H1a and H1b is thus not supported, in that there is no evidence that online bonding and bridging social capital results in access to resources in the form of financial capital. Online platforms were estimated to provide entrepreneurs with a new channel that will allow them to sustain existing relationships and form new weak ties with individuals and organisations (Song, 2015). Creating potential for the entrepreneur to reach online networks of suppliers, customers, distribution partners and other business associates. Bridging is developed through structural connects between diverse individuals, the structural holes in these networks have the potential to provide access to the resources needed to achieve desired outcome, bonding social capital is accrued through the entrepreneurs' relationally embedded interaction with people (Shaw, Smith & Smith, 2017). While it is suggested that bridging social

capital is correlated with access to information, resources and opportunities and bonding social capital reaps its benefits from trust, intimacy and close relationships (Gyor, Koltai, Lorincz, & Takacs, 2019).There is no evidence that female entrepreneurs have been able to use the online environment effectively to gain financial capital or any other resources required. The results can possibly be attributed to the lack of understanding on how social capital manifests itself online (Shaw, Smith & Smith, 2017).

Female entrepreneurs face challenges of financing and are often discriminated against by financial institutions (Lv & Xie, 2018). Networks in the form of personal contacts and personal networks provide support and development for small ventures. The support from the entrepreneurs' networks has the potential to mobilise resources; these personal ties are essential as they provide access to not only information, but access to financial capital (Bradley, Justo, & Milanov, 2015). The ability of the entrepreneur to leverage effectively from her network is significant as it provides the entrepreneur with competitive advantage in the form of financial capital, advice, tacit knowledge, strategic alliances and acquiring credibility and legitimacy (Cooper, Hampton, & McGowan, 2011). Female entrepreneurs' networks tend to be homogeneous, made up of personal relationships and networks (Bogren, Rennemo, von Friedrichs, & Widding, 2013).Blok, Gulikersa and Lansa (2015) argue that personal networks formed by entrepreneurs provide access to concrete resources like finance and intangible resources.

Personal networks are beneficial to the entrepreneur as they increase the willingness and ability of the entrepreneur to gain access to required resources, largely due to the close relationship (Arzlanian, Elfring & Stam (2014). According to the results on variables related to offline networks, hypothesis H1c is supported. Evidence shows that an offline network is positively related to the access to resources in the form of financial capital. Therefore, the notion that online social ties can be a source of social capital and resembles offline networks (Corten & Norbutas, 2017) should be interrogated further. The results further provide evidence that female entrepreneurs' personal networks are an essential aspect to their social capital. Female entrepreneurs tend to lack

enabling relationships and networks. Personal networks appear to be useful and effective in entrepreneurs gaining access to financial capital. Personal relationships are characterised by trust, mutual interest and reciprocity, hence explaining the likelihood that the relationship will be transformed into valuable resources (Camarero-Izquierdo, Gutierrez- Cillan, & Hernandez - Carrion, 2019).

5.4 Discussion pertaining to Hypothesis 2

The concept of crowdfunding has fundamentally changed how entrepreneurs gain access to funding for their new projects. Crowdfunding is a form of micro-financing that allows entrepreneurs to gain access to equity – based or reward based support. This online platform allows entrepreneurs to fund their ventures from a relatively large number of individuals using the internet (Mollick, 2014). Crowdfunding is viewed as an innovative channel to raise capital for new ventures and a way to also test new products and run marketing campaigns (Cordovaa, Dolcib & Gianfratec, 2015). Effective networking has the potential to create competitive advantage for female entrepreneurship; there is a difference in the way men and women network, particularly in the early stages of the business venture (Cooper & McGowan, 2011). Female entrepreneurs use both formal and informal networks to seek financial capital for their business venture hence resulting in a single network of close contact (Bogren, Rennemo, von Friedrichs & Widding, 2013).

Women entrepreneurs face social barriers in the form of gendered attitudes and practices hence influencing the entrepreneurs experience of gaining entrance and acceptance in to the entrepreneurial community (Stead, 2017).Ultimately this causes tension when female entrepreneurs are interacting with different stakeholders pushing them to joining microcredit groups to access financial capital as well as valuable networks (Bradley, Justo & Milanov, 2015). Lindvert, Patel and Wincent (2017) argue that female entrepreneurs are hampered by myths surrounding female entrepreneurs that they lack the ability to develop businesses relevant to draw venture capitalists, further perpetuating stereotypes. Female entrepreneurs in developing countries, cite access to

finance as a barrier to the growth of their business venture; despite the multiplicity of schemes, the lack of adequate networking hinders their ability to access the schemes (Locke & Wellalage, 2017). Studies in Kenya and other developing countries, suggest that women face more difficulty in accessing credit due to traditional beliefs and gender stereotypes, further influencing resource allocation; as women lack the necessary assets that banks require to secure credit (Rooks & Solano, 2018).

Crowdfunding aims to fill the existing gap of financing options, a tool which allows the entrepreneur to obtain tangible and intangible benefits (Jegeleviciute & Valanciene, 2014). Li, Wu, Xu and Zheng (2014, p.488) suggest that "entrepreneurs seem to have access to a diverse range of motivation to engage in crowdfunding" such as raising monetary resources, feedback on new products and marketing campaigns. The entrepreneurs' social network becomes increasingly important in collecting funding. Literature agrees that contributions from personal connection and "social networks facilitate the identification and assessment of investment opportunities" (Lukkerarinen, Teich, Wallenius & Wallenius, 2016, p.29). The entrepreneurs' social network size as well as the quality of the projects listed on crowdfunding platforms correlates to the success (Brem, Chang, Cheng, Kraus & Richter, 2016). Based on the results, hypothesis H2a is supported: The use of crowdfunding platforms is positively related to access to financial capital for female entrepreneurs. This finding is important for female entrepreneurship, as "access to new networks provides access to resources" encouraging female entrepreneurs to grow their networks (Bogren, Rennemo, von Friedrichs & Widding, 2013, p.63), Other studies suggest that female entrepreneurs in Africa tend to have networks that are more extensive, compared to men's networks (Lindvert, Patel & Wincent, 2017).

Networking is important for female entrepreneurs as it provides access to resources and minimises the gender gap in terms of positions of influence and power (Surangi , 2018). Crowdfunding provides a new avenue for female entrepreneurs to gain access to networks outside personal contacts, overcoming difficulties experienced. Findings in literature confirm that the

entrepreneurs' social network structures help predict the success of crowdfunding (Li, Wu, Xu & Zheng, 2014). Therefore, the amount of social capital accumulated in crowdfunding is heavily dependent on the range of social network platforms that the entrepreneur is active on (Li, Wu, Xu & Zheng, 2014). There are over 2.3 billion global users across sites such as Facebook, LinkedIn, Instagram, Twitter and Pinterest (Shaw, Smith & Smith, 2017). Social networking sites and online crowdfunding platforms assist investors in obtaining information on projects or business ventures to make an informed decision and to mitigated perceived uncertainty (Kang, Jiang & Tan, 2017). Female entrepreneurs in this study use different social media such as Facebook, Twitter, Instagram and LinkedIn, all essential in creating a positive impact and increasing the likelihood of obtaining successful funding. Research on crowdfunding suggests that entrepreneurs' social media network is a predictor of campaign success as this provides the potential investor with a better assessment of the investment opportunity (Lukkerinen, Teich, Wallenius & Wallenius, 2016).

Based on the hypothesis, crowdfunding platforms have provided female entrepreneurs with access to financial capital. The concept of social capital has been studied extensively in entrepreneurship literature; social capital refers to the "resources embedded within social contacts of individuals, influencing access to information and financial support" (Kang, Jiang & Tan, 2017, p.338). The ability of the entrepreneur to leverage social media networks is crucial as it directly impacts on the number of investors and amount raised, the availability and use of networks directly effects investments (Lukkarinen, Teich, Wallenius & Wallenius, 2016). This further substantiates the importance of the entrepreneurs' social capital, the entrepreneurs' contacts on social media become advocates for projects or business ventures, in other word, strong social capital is converted to financial capital for entrepreneurial activities (Kang, Jiang & Tan, 2017).

Some entrepreneurs are more successful than others in exploiting opportunities, purely due to high levels of social capital. This allows them to access information, based on extensive social networks, status, personal ties

and referral (Baron & Markman, 2003). High social capital can be prejudiced towards women and minority groups due to the lack of networks (Coleman & Robb, 2010). Many studies have investigated online platforms, specifically relating to social networking communities, these social networking sites are essential platforms that can provide financial and information support (Li, Wu, Xu & Zheng, 2014). The results are significant as female entrepreneurs' in South Africa are resorting to other forms of platforms to acquire financial capital. The role of social capital is significant to the growth and development of new ventures as it facilitates the processes by exposing entrepreneurs to business opportunities (Perrano, Petruzzelli & Roma, 2017).

Online social networks allow one to gain access to a larger social network than offline; based on previous findings, women tend to have significantly larger networks than men (Dunbar, 2016). The ability of entrepreneurs to leverage social media networks and other entrepreneurial networking sites is a predictor of the funding secured in online platforms (Lukkarinen, Teich, Wallenius & Wallanius, 2016). The entrepreneurs' degree of social capital has the ability to provide access to strategic resources and capture business opportunities necessary for business success (Perronea, Petruzzelli & Roma, 2017). High social capital refers to online feature of the nodes, in this instance, advocates on social media platforms such as Facebook, Twitter, LinkedIn or Instagram, refered to as the followersincrease the credibility of the entrepreneur (Kang, Jiang & Tan, 2017). Social networks play an increasingly important role in the funding of new ventures, information on the founder or organisation can add legitimacy and facilitate access to the crowd (Brem, Chang, Cheng, Kraus & Richter, 2016). According to Perronea, Petruzzelli and Roma (2017, p.1609) the entrepreneurs' social ties stimulate trust, hence by "virtue of social obligations between connected parties and information transfer through social relationships" one is able to access strategic resources.

The difference in males' and females' networking activities correlates to differences in venture performance (Bradley, Justo & Milanov, 2015). Female–led firms are faced with barriers of financing and networking, both crucial aspects that affect the performance of the firm (Lv & Xie, 2017). The difficulty in

securing resources has a direct impact on the performance of the firm. High social capital on online platforms is positively associated with firm performances of female entrepreneurs. Hypothesis H2b is thus supported; the accrual of social capital in the online context can assist entrepreneurs in realising opportunities, gaining resources and legitimacy, all important to firm success (Shaw, Smith & Smith, 2016). More women are using social networking sites as a tool in their business to achieve a more democratic and equal society (Genc & Oksuz, 2015). As digital service platforms have become widespread in all areas of society, the value of the actor or social media platform increases when the total number of users or actors increases (Hsieh & Wu, 2018). Digital platforms provide the entrepreneur or firm with access to unlimited data and networks of current sellers, in some way mitigating the barriers faced by female entrepreneurs (Chandna & Salimath, 2018). Entrepreneurial resources are vital to the survival and development of new ventures as these resources directly impact firm performance (Lv & Xie, 2017).

CHAPTER 6: CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

6.1 Introduction

In this chapter, the conclusions and recommendations are derived from the findings of this study on the use of online platforms by female entrepreneurs to enhance their social capital, necessary to gain access to resources required to improve firm performance. The conclusions are based on the problem statement, research questions and results of the study. Recommendations are provided based on the conclusion and intention of the study and implications are explained.

6.2 Conclusions of the study

The aim of this study was to investigate how social capital has evolved in a digital era characterised by digital technologies. Digital technologies call for a new era in entrepreneurship, a different way and form of pursuing opportunities in the market. Social capital and the networks embedded in social structures have proven to be valuable assets for entrepreneurs to access strategic resources, affording the entrepreneur the opportunity to enhance their firm performance (Camerero, Carrion, Cillian & Gutierrez, 2018). The social capital of female entrepreneurs in developing countries has been examined extensively, concluding the significant difference between social networks of male and female entrepreneurs, furthermore, influencing resource allocation (Rooks & Solano, 2018; Lindvert, Patel & Wincent, 2017; Surangi, 2018). The study attempted to provide a theoretical examination and explanation concerning the formation of social capital on digital platforms and exploitation of female entrepreneurs' social capital.

The findings reveal that female entrepreneurs within the South African context gain access to financial resources using personal networks, confirming previous research findings of the importance of embedded resources in strong ties for

entrepreneurs to gain access to the required resources. As an initial conclusion, it can be stated that female entrepreneurs may resort to their personal contacts and networks to gain valuable resources in the form of financial capital. According to the findings, bonding and bridging social capital accumulated on online platforms by female entrepreneurs has not contributed to resource enrichment. The concept of bonding and bridging social capital has been studied within the context of online social networks, empirical research argues that online networks are rooted in offline social networks (Song, 2015), further supporting the notion that online networking is used to reconnect with offline contacts (Corten & Nornutas, 2017), thus making the use of an online platform as an environment to leverage embedded resources from social networks futile.

Based on the findings, the emergence of digital platforms has not created a gender neural platform for entrepreneurial activities and associated resources (Kraus S. , Kailer, Kallinger, Palmer, & Spitzer, 2019). Female entrepreneurs appear to be utilising different digital technologies and platforms in their new ventures, with a social media presence on Facebook, Twitter, LinkedIn, Instragram, various entrepreneurial networking sites and crowdfunding platforms, seeking new ways of pursuing entrepreneurial opportunities. This finding contributes to digital entrepreneurship; traditional ways of pursuing and exploiting opportunities is slowly being replaced with new venture opportunities present in social media and new technologies. Digital technology infrastructure facilitates entrepreneurial activities ranging from social media to crowdfunding systems. Social capital accumulated on social media platforms is imperative in promoting new projects or ventures on crowdfunding platforms; ultimately, the social capital is converted to financial capital. The findings reveal that female entrepreneurs' use of crowdfunding platforms has resulted in acquiring access to financial capital, further, the use of online platforms has contributed to firm performance.

This finding demonstrates the development in social capital and female entrepreneurship, indicating that the digital ecosystem can provide the entrepreneur with access to resources (Kraus S. , Kailer, Kallinger, Palmer, & Spitzer, 2019). This paper complements previous research studies on the

evolution of digital entrepreneurship, digital technologies that facilitate entrepreneurial activities among peers, customers, business partners, investors; at the same time, reducing perceived uncertainty, developing interpersonal relationships and influencing access to information and financial capital (Kang, Jiang & Tan, 2017). To sum up the findings presented in chapter 5, contrary to initial ideas of (Ellison, Lampe, & Steinfield, 2007; Kwan & Skoric, 2011; Corten & Norbutas, 2018) concerning bonding social capital and bridging social capital in terms of online networks compared to offline networks when accessing valuable resources, our findings suggest that strong ties in the form of personal contacts (close-knit relationships) act as a generating and enriching social structure for female entrepreneurs to access social capital resources.

As a general conclusion, the study highlights the importance of digital technologies in the entrepreneurial process. Digital technologies provide female entrepreneurs with a new avenue to exploit entrepreneurial opportunities and engage in entrepreneurial activities, an environment that encourages individuals to co-create value, promotes access, stimulate network effects and mediate the exchange among different external firms and individuals (Choi, Kim, & Nam, 2018).The digital entrepreneur is necessary to overcome barriers experienced by female entrepreneurs in generating social capital resources and encouraging firm growth of female-led enterprises.

6.3 Implications and Recommendations

There is valuable body of knowledge on social capital and female entrepreneurship; this paper examined the relationship between new digital technologies and value derived in the form of social capital resources. The advancement in literature from this research was the ability of female entrepreneurs to reach outside their personal contacts by using digital technologies to expand their entrepreneurial ventures. In building their networks, females in this research made use of social media platforms, entrepreneurial networking and crowdfunding platforms to extend their networks and alternative methods to fund their entrepreneurial activities, thus diversifying their networks. Despite personal contacts proving to be an essential component

to the social capital of female entrepreneurs, it is clear that they have resorted to other areas to increase the likelihood of accessing financial capital and other resources for firm growth.

This finding is not without its challenges, the implication of using digital technologies is characterised by uncertainty and risk in terms of legal and tax regulations (Kraus S. , Kailer, Kallinger, Palmer, & Spitzer, 2019). Technological advancements in the African context is slow and characterised by high levels of uncertainty, and female entrepreneurs tend not pursue entrepreneurial ventures in the technological space. This research highlights the positive impact of digital technologies, female entrepreneurs are breaking down boundaries by using new digital infrastructures, such as crowdfunding systems, social media platforms and online forums to pursue entrepreneurial initiatives (Nambisan, 2017). The implication thereof is not to increase the number of female-led technology firms, rather female entrepreneurs should implement new digital technologies in their firm. Digital platforms create network effects encouraging a shared economy thus lowering barriers faced by female entrepreneurs, the increased participation and interaction with users and extended networks online has the ability to build legitimacy for businesses and to provide access to embedded resources.

From a policy perspective, to increase female participation in entrepreneurship, ICT policies adopted by government should address widespread access to broadband, smartphones and the impact of digitalisation in the South African context. A better understanding of business digitalisation is a key factor as “1) the digital nature of a firm’s goods or services, 2) the digital distribution potential of a good or service, 3) the potential digital interactions with key external stakeholders within the value chain, and 4) the digital potential of virtual internal activities associated with a firm’s operation” (Eftekharian, Salehi, Samipourgiri, & Yaghoubi, 2012, p. 1048). From a scholarly perspective, extensive research is necessary to understand the dynamics and complexities of entrepreneurship in a digital era. Both public policy and educational institutions need to play a decisive role in formulating policies to cater for new digital infrastructures, open data and implications on entrepreneurial activities

as well as the user (Nambisan, 2016). Digital technologies have the potential to increase access to financial capital necessary in the different phases (early start-up to growth) in the entrepreneurial process for firm growth. Female entrepreneurs are seen to increase economic growth and job creation (Locke & Wellage, 2017), and government should seek for new ways to promote crowdfunding and fund such platforms.

6.4 Limitations of the study

There are limitations to the study, which may offer opportunities for future research. Firstly, relating to the research design, the instrument used to collect data on financial capital and firm performance displayed low internal consistency. As such, these constructs should be tested in another study or consider finding an instrument with high Cronbach Alpha to ensure reliability. Secondly, the limited timespan of conducting data collection imposed some constraints and necessitated sending surveys to more male entrepreneurs than anticipated, in the event they were partnering up with females. Thirdly, the study focused extensively on social capital and embedded resources where much still remains to be done in assessing the impact of new digital technologies on female entrepreneurship.

6.5 Suggestions for further research.

Future research should therefore be considered as current study is limited to the impact of social capital in the digital age by examining female entrepreneurship. Future studies are encouraged to further explore how bonding social capital and bridging capital manifests on digital platforms as previous studies provide no indication, especially in terms of social capital resources. Second, in relation to previous research, digital entrepreneurship is a growing phenomenon, studies should focus more on the use and implication of digital technologies in female owned entrepreneurial activities, benefits derived and whether non-traditional entrepreneurship provides female entrepreneurs with the competitive advantage necessary for firm growth.

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APPENDIX A

Research instrument

Social capital in a digital age: greater access to network for female entrepreneurs

Actual Research Instrument

The following questions will help me to find out more about you and your business. Where relevant place a cross (X) next to line that best corresponds to your answer other write down your response.

1. Firms age 1. Less than 12 month _____ 2. Less 36 months 3. More than 36 months

2. Your gender: 1. Female ------ 2. Male ---- 3. Prefer not to answer ----

3. Platform type: 1. Web based platform ------ 2. Mobile based platform ---- 3. Both ---- 4. Other (please specify) ----------

4. Platform participant: 1. C2C --------- 2. B2B -------- 3. B2C ---- 4. Other ------

5. Revenue model: 1. Commission fee ----- 2. Subscription fee ----- 3. Supply side --- 4. Demand side ----- 5. Other (please specify) -----

6. Other social media to which posts are made
   6.1. Twitter ----
   6.2. Facebook ----
   6.3. Blogs ----
   6.4. Linkedin ----
   6.5. Entrepreneurial network sites ----
   6.6. Other (please specify) -----

7. Indicate your experience working in the sector your business is operating _____ Years

8. Is this your first business? 1. Yes ---- 2. No -----

9. If no to 6 above how many businesses have you previous started? _____

10. How many employees do you employ?

11. 1. Total number of employees_____ 2. Full time employees_____ 3. Part-time employees_____

12. Indicate the priority area in which your business operates: (select only one option)

Agriculture -----

Mining ------

Manufacturing -----

Transportation ------

Wholesale/ retail ------

Information/ communication technology -----

Finance ------

Professional services -----

Administrative services -----

Health, education, government and social services ------

Personal/ consumer services Water and sanitation ------

Other (mention if you haven't ticked above) -------

What do you sell in your business/what service do you offer?

13. _____
_____

14. The following question will help me to find out more about how you run your business. Indicate how much you agree or disagree with a statement by placing a cross (X) in the box corresponding to your answer

Please indicate how much agree or disagree with the following statements by circling one option in each line:	Strongly disagree	Disagree	Neither disagree or agree	Agree	Strongly agree
A Social capital variables					
1. The group of personal contacts facilitated the start of my business	1	2	3	4	5
2. The group of personal contacts provide forums to discuss new business ideas	1	2	3	4	5
3. The group of personal contacts provided greater access to financial resources	1	2	3	4	5
4. Being a member of a business forum / organization facilitated the start of a new venture	1	2	3	4	5
5. Being a member of a business forum / organization provide access to financial capital	1	2	3	4	5
6. I often seek advise about business related matters from my personal networks	1	2	3	4	5
7. Many people from personal network passed you business (referrals)	1	2	3	4	5
8. Members of a digital platform passed you business (referrals)	1	2	3	4	5
9. I have passed closed business (referrals) to my online network	1	2	3	4	5
10. Members of the social networking site passed you closed business (referrals)	1	2	3	4	5
Bridging					
1. Based on the people I interact with online, it is easy for me to hear about new job opportunities.	1	2	3	4	5
2. The people I interact with online help me to stay in touch with what is new and popular.	1	2	3	4	5
3. The people I interact with online could help me get good information about new opportunities	1	2	3	4	5
4. Interacting with people online makes me interested in things that happen outside of my town.	1	2	3	4	5
5. Interacting with people online makes me want to try new things	1	2	3	4	5
6. Talking with people online makes me curious about other places in the world.	1	2	3	4	5
7. I interact with people online who are from different economic backgrounds than me	1	2	3	4	5

8.	I interact with people online who are members of a religion different than mine	1	2	3	4	5
9.	I interact with people online who are mostly the same gender as me	1	2	3	4	5
10.	I interact with people online from different racial or ethnic backgrounds	1	2	3	4	5
11.	Interacting with people online makes me feel like part of a larger community	1	2	3	4	5
12.	Interacting with people online makes me feel connected to the bigger picture	1	2	3	4	5
Bonding						
1.	There are several people online I trust to help solve my problems	1	2	3	4	5
2.	There is someone online I can turn to for advice about making very important decisions.	1	2	3	4	5
3.	The people I interact with online would put their reputation on the line for me	1	2	3	4	5
4.	The people I interact with online would be good job references for me	1	2	3	4	5
5.	The people I interact with would online share their last dollar with me.	1	2	3	4	5
6.	The people I interact with online could get me into an exclusive organization.	1	2	3	4	5
7.	I do not know people well enough online to get them to do anything important	1	2	3	4	5
8.	I do not trust people who are a different race than me.	1	2	3	4	5
9.	I do not trust people who live in a different country than me	1	2	3	4	5
10.	The people outside of my immediate friends are not at all important	1	2	3	4	5
C Financial Performance variable						
1.	Family and personal networks provide greater access to financial capital	1	2	3	4	5
2.	Organization and institutional networks provide greater access to financial capital	1	2	3	4	5
3.	Social media network provide greater access to financial capital	1	2	3	4	5
4.	I have managed to create employment for others in my business over the past years	1	2	3	4	5
5.	Steady growth and stability in my business this year is my primary concern	1	2	3	4	5
6.	Over the past year, my online networks have provided big business opportunities	1	2	3	4	5
7.	In my business, rapid growth this year is my dominant goal					
8.	Web – based platform provide greater access to financial capital	1	2	3	4	5
9.	I have actively used resources provided by my online networks in my business					
E Crowdfunding platform		1	2	3	4	5
1.	Members of the platform provide access to business related matter	1	2	3	4	5
2.	Members of a platform provide information on other users	1	2	3	4	5

3.	Members of a platform provide access to financial capital	1	2	3	4	5
4.	Members of a platform provide access to supplier	1	2	3	4	5
5.	Members of a platform provide access to complementary product / service	1	2	3	4	5
6.	Members of a platform provide access to larger customer base	1	2	3	4	5

APPENDIX A

Consistency matrix

Research problem stated here					
Sub-problem	**Literature Review**	**Hypotheses or Propositions or Research questions**	**Source of data**	**Type of data**	**Analysis**
Sub question 1: To what extent does the use of online platforms accrual social capital and provide access to embedded resources and enhanced firm performance?	Adler and Kwon, 2002; Baron and Markman, 2003; Adler and Kwon, 2014; Urban, 2015; Coleman and Robb, 2010; Brass and Kilduff, p 319, 2010; Kalyani and Kumar, 2011; Valanþieno & Jegeleviþinjto, 2013, p.601; Laurella, Sandstromb & Suseno, 2018; Petruzzelli, Perronea & Roma, 2017	H2a: The use of crowdfunding platforms by female entrepreneurs is positively related to access to Financial Capital H2b: High social capital on online platforms is positively related to firm performance of Female entrepreneur's	ECF1-6 FP1-9	Continuous, Dichotomous, Nominal, Ordinal	Exploratory factor analysis, regression analysis

Research problem stated here					
Sub-problem	**Literature Review**	**Hypotheses or Propositions or Research questions**	**Source of data**	**Type of data**	**Analysis**
Sub question 2: What are the elements evident in offline channels that lead to access to resources?	Arzlanian, Elfring and Stam, 2014; Fu, Wang and Zhao, p.349, 2016; Fischer and Reuber, 2011; Casey, Kotovirta and Ruutu, 2017); Hsieh and Wu, 2018	H1c: Offline networks are positively related to financial capital for female entrepreneurs	SC1-10 FP1-9	Continuous, Dichotomous, Nominal, Ordinal	Exploratory factor analysis, regression analysis
Sub question 3: To what extent do online channels foster higher bonding / bridging social capital resulting in access to resources?	Adler and Kwon, 2002; Arzlanian, Elfring and Stam, 2014; Fu, Wang and Zhao, p.349, 2016; Fischer and Reuber, 2011; Casey, Kotovirta and Ruutu, 2017); Hsieh and Wu, 2018	H1a: There is a positive relationship between bonding social capital in terms of online networks and access to resources financial capital by female entrepreneurs H1b: There is a positive relationship between bridging social capital in terms of online networks and to access to financial capital by female entrepreneurs	BO-1 – 10 BO1-12 FP 1-9	Continuous, Dichotomous, Nominal, Ordinal	Exploratory factor analysis, regression analysis