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Social capital in a digital age: a focus on bridging and bonding social capital of women entrepreneurs in South Africa

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Abstract: Despite increasing interest in women entrepreneurship, not many investigations explain the impact of new digital technologies on networking in African countries, where women face obstacles in terms of entrepreneurial networks, as well restricted access to finance. Consequently this article examines bridging and bonding social capital from a perspective of women entrepreneurship in terms of accessing financial capital from crowdfunding. The study takes place in South Africa, where data is collected via a survey from a sample of women entrepreneurs using crowdfunding platforms. Study measures are subject to psychometric testing and the hypotheses are tested using multiple regression analyses. Crowdfunding platforms were found to be positively and significantly related to both bonding and bridging social capital, but these factors were not significantly related to financial capital. The article represents a novel empirical investigation into associations between digital entrepreneurship, women entrepreneurship and social capital in an African market context.

Keywords: women entrepreneurship; crowdfunding; social capital; bonding and bridging social capital; networking; South Africa.

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Biographical notes: Boris Urban was the inaugural Chair in Entrepreneurship at the Wits. His primary research agenda is to deepen understanding of entrepreneurial behaviour within a unified explanatory structure at the individual, organisational and societal levels. Based on more than 100 articles in academic journals his work is well recognised in the field (h-index: 33).

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1 Introduction

An overview of the literature indicates that interest in women's entrepreneurial studies has proliferated over the past few decades (Brush and Greene, 2016; Ojong et al., 2021; Urban, 2019), with studies focused on the economic growth contributions made by women, as well as on their overall support to the development and welfare of societies in general (Elam et al., 2019; Jennings and Brush, 2014; Kelley et al., 2017). Despite such interest and advances in women entrepreneurship, studies reveal that women entrepreneurs, when compared to men entrepreneurs, encounter numerous hindrances which include a lack of women role models and mentors, restricted access to financial capital (AFC), as well as fewer entrepreneurial networks in their communities (Cabrera and Mauricio, 2017; Elam et al., 2019; Hechavarria et al., 2019). Several investigations indicate that women entrepreneurs lack networks which should provide support for their enterprises in terms of opportunities, funding possibilities, markets, and other information resources (Baughn et al., 2006; Bradley et al., 2015; Cooper et al., 2011; Slotte-Kock and Coviello, 2010; Yetim, 2008). Additionally, while networks may exist, low levels of awareness, and the ability to access and utilise such networks still remains limited for many women entrepreneurs particularly in African countries (Urban, 2019).

Research is pervasive that entrepreneurial activity is "embedded in social relationships which consist of personal contacts, business contacts and other entrepreneurial networks that form social capital" (Bernhard and Olsson, 2020; Dana and Morris, 2007; Gedajlovic et al., 2013; Light and Dana, 2013; Pruthi and Wright, 2019; Urban, 2019). Recognising the importance of entrepreneurial networking, notwithstanding that claims of social capital's usefulness for entrepreneurship are overstated (Light and Dana, 2013), researchers have noted that entrepreneurs are more frequently using online social networks to gain access to resources and rely on digital platforms to accrue the necessary social capital (Shaw et al., 2017; Song, 2015). Over the past decade, through daily interactions with the internet, search engines, social networking sites and apps on smartphones (Fu et al., 2017; Hagsten and Kotnik, 2017; Ong et al., 2020), digitalisation has created new avenues in the entrepreneurial process, breaking down the boundaries in the different phases, while creating more diversity in networks (Nambisan, 2017). Studies focused online social networks indicate that early funding at the start-up phase, network density, and time to first collaboration are all important determinants on venture survival (Song et al., 2019). Digital technologies and the internet continue to have an incredible impact on individuals and organisations (Ahituv and Hasgall, 2018), particularly as the introduction of digital platforms allows people to access and connect to a boundary-less world in order to share information and business processes (Kugler, 2019; Ngai et al., 2015; Rooks and Solano, 2018; Song, 2015).

Despite such emerging interest in digitalisation and entrepreneurship, mainstream literature has failed to adequately address how social capital manifests itself online (Shaw et al., 2017) for women entrepreneurs in emerging economies (Urban, 2019). Researchers note that entrepreneurial studies have somewhat neglected the importance of digital technologies in the pursuit of opportunities in forums ranging from social media to crowdfunding platforms (Nambisan, 2017; Ngoasong, 2018). Moreover, while research on women entrepreneurs' social capital has increased, not many studies have taken into account the impact of new digital technologies on social capital, particularly in an African country context (Dana et al., 2018; Ojong et al., 2021; Urban, 2020). This

omission in the literature provides an opportunity to undertake a unique investigation into this emerging topic which is formulated in terms of the article research question: to what extent does the use of crowdfunding platforms by women entrepreneurs result in higher levels of bonding and bridging social capital, which ultimately increases their AFC?

The article offers novel contributions to the entrepreneurship literature, both to theory and practice, where research pleas have been made for studies focusing on the nuances of women entrepreneurship by aligning social capital and digital business from a non-Western perspective (Urban, 2020). Considering the field of digital entrepreneurship is relatively new and topical, with research emerging suggesting that the digital environment lowers barriers experienced in terms of social inequalities, this study aims to deliver an original contribution to this emerging field. Ngoasong (2018) suggests that the influence of resource insufficiency can be surmounted by the entrepreneurs' digital competencies, which in itself is an important topic deserving investigation. In other words the entrepreneur has the ability to overcome logistic challenges and physical infrastructure difficulties by connecting with potential financiers, buyers and sellers online. Consequently, by focusing on women entrepreneurs specifically in terms of bonding and bridging social capital in relation to financial capital, the article delivers a unique empirical inquiry, in a relatively under-researched country context,

Providing a more nuanced focus on bridging and binding social capital is valuable, as social capital is context specific and in order to capture unique aspects of this context (Mayasari and Chandra, 2020; Zelekha and Dana, 2019), bonding and bridging social capital are central to improve understanding of whether the use of online social capital is more advantageous towards accessing financial capital. Developing entrepreneurial social capital is a common barrier among women entrepreneurs (Stead, 2017), with research indicating that the extent of assistance that women entrepreneurs obtain from their social networks differs significantly when compared to their male counterparts (Rooks and Solano, 2018). Since social capital influences both the decision to start and grow a business, gender differences in network arrangements and networking behaviour are highly relevant (Manolova et al., 2007). Indeed, scholars note that the value of social capital to entrepreneurship is even more important in emerging economies, as institutions tend to be fragile, and relationship networks play a huge role in filling gaps that are left by dysfunctional institutions (Braune et al., 2020; Dana and Morris, 2007; Jones et al., 2018; Light and Dana, 2013; Zoogah et al., 2015).

Another contribution of the study is that the study setting takes place in an African market context, where there is a requirement for empirically rigorous understandings into a range of under-reported and emergent matters (Jones et al., 2018; Urban, 2020; Zelekha and Dana, 2019). In this regard it is expected that the study results will then allow researchers and policy makers to compare data on women social capital and digital networking in similar country contexts (Dana et al., 2018; Ngoasong, 2018). Additionally, the study aligns itself with research highlighting how the "evolution of Web 2.0 technologies has created many different social networking platforms such as Facebook, Twitter, and LinkedIn as well as crowdsourcing and crowdfunding, which enable entrepreneurs to harness the creative solutions of a distributed network of individuals" [Fu et al., (2017), p.355]. Understanding the extent to which crowdfunding platforms allow for the exchange of resources between the individual and funder will provide women entrepreneurs with an additional option with which to obtain necessary financial resources to start and run their businesses (Laurell et al., 2019; Ong et al., 2020).

The paper is structured to start with a review of the relevant literature in order to support the formulation of the study hypotheses. The study research methodology is then explained in terms of instruments used and data collection procedures. The presentation of the statistical analyses are then presented and the discussion section follows in terms of the identifying the article's contributions and implications. The paper ends by delineating the shortcomings of the article and directions for future inquiry are suggested.

2 The study context and women entrepreneurship

South Africa is characterised by very high inequality as a society and shows the highest Gini coefficient (0.63) in the world (World Bank, 2018). Such high inequality is typified by a dual-logic economic system where on the one hand there is a relatively highly developed big business corporate economic sector and on the other hand a relatively underdeveloped informal sector fighting for survival (Urban, 2020). In South Africa, the government actively encourages the participation of women and youth entrepreneurship in the informal. Despite such efforts and the heterogeneous nature of the informal sector in South Africa, many informal entrepreneurs are perceived as survivalists, who are pushed into this sphere due to high levels of unemployment in the country (Dana et al., 2018; Urban, 2019). Furthermore, South Africa is overwhelmed by institutional corruption and criminal activities which results in pitiable financial and business support as well as inadequate infrastructural capacities preventing small businesses from operating efficiently and accessing markets (Bowmaker-Falconer and Herrington, 2020). Correspondingly, rent-seeking activities, such as nepotism and corruption in both state and private institutions, provide onerous regulations and obstacles often resulting in unproductive entrepreneurial activity (Venter and Urban, 2015).

In many developing and African economies, many women are still confined to 'traditional women functions' which tend to carry 'a lower status in society' and which persist as a result of 'cultural biases and an entrenched gender division of labour' (De Vita et al., 2014). Similarly, in current South Africa most women entrepreneurs are positioned within the "crafts, hawking, personal services and retail sectors, where low technology is utilised in what are mainly undifferentiated enterprises that generally have lower turnover and fewer employees, than those owned by men" [Bowmaker-Falconer and Herrington, (2020), p.41].

Women have been historically excluded from access to male dominated networks, preventing them from entering certain industries primarily as a result of differences in social capital which is reported to be significantly dissimilar for women entrepreneurs assessed in relation to male entrepreneurs (Cabrera and Mauricio, 2017). Concomitantly, investigations into AFC and start-up funding indicate that women-owned enterprises have lesser overall capitalisation to use for start-ups as well as less access to debt finance than men-owned enterprises (Bosma and Levie, 2009; Braune et al., 2020; Coleman, 2000). Research findings, based on countrywide survey of women entrepreneurs in Malawi, show that the connection between gender and enterprise performance is a multifaceted one, as women-owned initiatives appear to expand more swiftly in terms of employment growth than male-owned ones (Chirwa, 2008). Studying the influence of different social norm elements on women entrepreneurship activity in Spain, informal factors, in the form of "social recognition of the entrepreneurial career and women networks were

significantly related to women entrepreneurship activity, whereas formal institutions did not have a significant influence" [Noguera et al., (2015), p.347].

Similarly, studies investigating women entrepreneurship advancement in the Sub-Saharan African (SSA) region, demonstrate how issues of legitimacy and inadequate social appreciation of women entrepreneurs are significant hurdles to their development (De Vita et al., 2014). Other study findings highlight that women in emerging economies experience unequal access to opportunities and markets including weak business associations and lack of networking (Lv and Xie, 2018). These findings underscore the hypothesis that gender impacts the favourable effects of social capital and networks, where women entrepreneurs persist in lagging behind, especially in high-growth industries as they experience biases hindering their financial supplies (Cabrera and Mauricio, 2017).

2.1 Social capital and networking: bridging and bonding social capital

The scholarship on social capital develops from classic works in economics and sociology (Granovetter, 1973). While there are numerous conceptualisations, social capital may be comprehended as the "goodwill that is created by the fabric of social relations and that can be mobilised to facilitate action" (Adler and Kwon, 2002; Bernhard and Olsson, 2020; Slotte-Kock and Coviello, 2010; Street and Cameron, 2007). Social capital has relevance to the entrepreneurship literature and in this context 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 venture success [Brass and Kilduff, (2010), p.319]. Notwithstanding the growing quantity of studies on social capital and entrepreneurship, the social capital concept is not without criticism (Hoang and Yi, 2015; Urban, 2019). Criticisms range from vague conceptualisations to unclear distinctions between the sources of social capital in terms of either relationships, networks, or the impact and level of its consequences in terms of individual or collective social capital benefits (Gedajlovic et al., 2013; Nahapiet and Ghoshal, 1998). While the conventional view of social capital involves relationships of trust and reciprocity that are inherent in social networks (Slotte-Kock and Coviello, 2010), counter arguments suggest that social capital inhibits entrepreneurship as it enforces mental conformity on entire groups (Dana and Morris, 2007), or hinders escaping deteriorating alliances and partnerships (Adler and Kwon, 2002; Crow, 2004). Moreover, there is also trepidation that social capital can dominate entrepreneurial activity when an overbearing group excludes others from access to information, influence, and solidarity benefits, that it enjoys (Light and Dana, 2013). This 'suppression hypothesis' however tends to neglect the possibility that, when encountering a dominant group, well bestowed with social capital, a subordinate minority may obtain social capital from this dominant group by bridging into it. In this manner, bridging ties would provide access to a flow of business resources which may eventually enable the subordinate group to mount an entrepreneurial retort on the strength of such externally acquired resources (Chen, 2011; Crow, 2004; Light and Dana, 2013).

Similarly, other researchers find a lack of empirical evidence on different forms of social capital which are not based on personal or institutional trust, which tend to make up the bulk of research of the social capital literature (Cabrera and Mauricio, 2017; Urban, 2019). Part of the difficulty in obtaining conceptual clarity on the social capital construct is distinguishing between the different dimensions of social capital which tend

to incorporate various aspects such as structural element of the network, the relational strength of the network, the cognitive aspects of the individual in the network relationship, and the resources that would be made available through the network (Gedajlovic et al., 2013). Combining these different dimensions, in terms of the resources available through the network, the structure as well as the strength of the network, social capital can be viewed as the "sum of actual and potential resources embedded within, available through, and derived from the network of relationships possessed by individuals or social units" [Nahapiet and Ghoshal, (1998), p.243]. The implication of this definition being that social capital can be extracted from even impersonal linkages between units or people, which are suitable for the purposes of this article in terms of analysing bridging and bonding social capital.

There is an extensive literature highlighting the importance of networks to entrepreneurs as it provides understanding of relevant opportunities and allows for easier access to important resources (Arenius and De Clercq, 2005; Davidson and Honig, 2003; Pruthi and Wright, 2019). Social capital in term of networks emphasises the importance of social relations by differentiating between two forms of social capital that focus on external and internal relations, namely bridging and bonding social capital (Arzlanian et al., 2014). Adler and Kwon (2014) suggest 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).

'Bonding social capital' refers to a reciprocal relationship based on trust and strong repeated social connections. Bonding social capital focuses 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 and Norbutas, (2018), p.122].

'Bridging social capital' is based on external connection that provides non-redundant resources (Gedajlovic et al., 2013). 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 (Lv and Xie, 2018). Bridging social capital is weak ties, loose in nature and provides useful information or opportunities, however, exhibit no emotional support. According to Shaw et al. (2017), bridging social capital are 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 and knowledge that is not accessible in the individual's immediate circles (Corten and Norbutas, 2018).

2.2 Online social networking: crowdfunding

Online social network tools have created an avenue for individuals to connect, forming both strong and weak networking ties (Gyor et al., 2019). Studies reveal that networking ties established in online circumstances potentially provides similar quality and quantity of social capital compared to offline environments (Corten and Norbutas, 2018; Song et al., 2019). Consequently, online social ties can be regarded as a source of social capital despite any geographical location, and can benefit entrepreneurs in a number of ways, such as gaining legitimacy, access to resources, collaboration and financial capital

(Agrawal et al., 2015). Social network platforms including games, social activities and media contents are typically used to solicit indirect networks (Choi et al., 2018), where according to Gyor et al. (2019, p.44), there is evidence that "direct person to person communication on Facebook is associated with bridging social capital."

Digital platforms are flexible as they encourage "participants to serve each other, to co-create value and to stimulate network effects" [Fu et al., (2017), p.349]. The network effect from such collaboration allows entrepreneurs to create value by tapping into resources and capacity that they do not own. The benefits of digital platforms are the large customer base that enables the entrepreneur to have access to unlimited data that can be used to tailor services and products to meet changing customer taste (Casey et al., 2017). Similarly, the idea of crowdfunding has gained momentum in the field of entrepreneurship as artists and entrepreneurs seek alternative methods to fund their projects by utilising social networking to increase their potential to access early stage financing (Agrawal et al., 2015; Buttice et al., 2017; Laurell et al., 2019).

Crowdfunding as an internet platform, is 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" [Kraus et al., (2019), p.355]. This platform is dependent on an online social community necessary to solicit the exchange of resources between the creator and the funder and is causing a potential disruption in micro financing and social networking (Li et al., 2014). 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 et al., 2016). Research is evolving which shows crowdfunding and social media are highly intertwined as the individual's online social network to some degree impact the realisation of crowdfunding efforts (Laurell et al., 2019).

Hypotheses are formulated based on aforementioned, particularly as networks are a critical component of crowdfunding, since social networks "facilitate the identification and assessment of investment opportunities" [Lukkarinenn et al., (2016), p.29]. In formulating the study hypotheses, the abovementioned different streams of research on networking and crowdfunding inform the expected relationship between the bonding, bridging social capital and AFC as they apply to women entrepreneurship.

H1 There is a positive relationship between bonding social capital via crowdfunding platforms and AFC for women entrepreneurs.

H2 There is a positive relationship between bridging social capital via crowdfunding platforms and AFC for women entrepreneurs.

3 Research design

The research was a cross-sectional study designed to collect primary data from women entrepreneurs in two major South African cities, namely the greater Johannesburg and Cape Town areas which are deemed to be centres of entrepreneurial venturing (NSBC, 2016; Urban, 2020).

3.1 Data collection

The study respondents were women entrepreneurs involved in small and medium business enterprises. "Small and medium sized enterprises (SME) in South Africa were operationalised as per the amended Schedule 1 in terms of the National Small Enterprise Act of 1996, where small enterprise means a separate and distinct business entity, together with its branches or subsidiaries, if any, including cooperative enterprises, managed by one owner or more predominantly carried on in any sector or subsector of the economy" [RSA, (2019), p.111]. Following this definition of SMEs, sampling selection criteria was focused on women entrepreneurs operationalised in terms of:

a enterprises that are majority-owned (51%) or more by women (Bowmaker-Falconer and Herrington, 2020; Elam et al., 2019)

b respondent was the enterprise owner and manager

c respondent uses crowdfunding as a platform and has posted online content on their product/service offering at least once a week on one social media platform – Facebook, Instagram, Twitter, in the last 30 days before taking the survey.

Sampling frames deemed as suitable crowdfunding platforms used by entrepreneurs in South Africa were identified, which included Angellist South Africa (2019), Thundafund (2019) and The People's Fund (2019) databases. Women entrepreneurs use these platforms extensively and the projects listed therein range from arts to technology-based projects. Projects that attracted minimal funds (less than –R100,000) were discarded, as they seemed to be mainly recreational projects. Based on these sampling frames, a total of 1,148 start-up companies with active profiles operating in Gauteng (605) and the Western Cape (543) region were sampled. An online electronic questionnaire link was distributed via Qualtrics to all respondents. Respondents were assured that data collection was a voluntary process where privacy and confidentiality was stressed and addressed any ethical concerns. After several follow-up reminders a total, 166 questionnaires were received but after analysing the raw data 71 responses was incomplete therefore could not be used and were discarded. Subsequently a total of 93 responses were captured and recorded as the final sample. To counteract a commonly raised concern when employing surveys, "non-response bias, a t-test was carried out by comparing responding and non-responding individuals" along attributes of SME age and number of employees. The results indicated that the values were insignificant in both cases ($p > 0.10$) (Cooper and Schindler, 2014).

3.2 Instruments

All of the study measures were based on relevant prior studies as covered in the literature review. All questions relating to these measures were "structured along a five-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree" (Cooper and Schindler, 2014). Finally, all items were used as aggregate scores to reflect each construct separately.

To measure the independent variables (IVs) – bridging and bonding social capital, the internet social capital scales (ISCS) and other similar social capital measures (Arzlanian et al., 2014; Brass and Kilduff, 2010; Coy et al., 2016) were scrutinised for suitability. The ISCS scale predominately focuses on measuring two social capital dimensions –

bridging and bonding, where the items for the scale were derived primarily from the work of Adler and Kwon (2014). 'Bonding social capital' (BONDSC) as the first IV was operationalised as 'strong network ties', in terms of relationships between individuals derived from close friends, family and online social groups that are based on trust (Adler and Kwon, 2014; Corten and Norbutas, 2018). BONDSC included questions such as: "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 second IV, 'bridging social capital' (BRDGSC) assessed with 12 items operationalised as 'weak networking ties' in terms of relationships that are superficial, diverse and largely necessary to acquire resource (Adler and Kwon, 2014; Arzlanian et al., 2014; Corten and Norbutas, 2018). BRDGSC included questions such as: "based on the people I interact with online, it is easy for me to hear about new job opportunities"; "the people I interact with online help me to stay in touch with what is new and popular"; "the people I interact with online could help me get good information about new opportunities."

Crowdfunding platforms (CWPT) was operationalised as an IV in terms "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 and Valanciene, (2015), p.601]. Eight items were used to measure CWPT as adopted from priors studies measuring the entrepreneurs' social capital in a crowdfunding context (Perrone et al., 2017), which included questions such as: "members of the platform provide access to business related matter"; "members of a platform provide information on other users"; "members of a platform provide access to financial capital."

In terms of the dependent variable (DV), AFC was operationalised as access to debt or equity financing, such as funding from banks, government initiatives, enterprise development, venture capital, and angel investors (Buttice et al., 2017; Brem et al., 2016; World Bank, 2018). Items from the questionnaire used in the 'GEM Adult Population Survey' (Bosma et al., 2020) were employed to capture the DV. AFC was based on five items which included questions such as "if I wish to grow my business, I will succeed in obtaining necessary funds to do so"; "web-based platform provide greater access to my financial capital needs."

Prior studies (e.g., Urban, 2019) indicate that different control variables may have an influence on the proposed relationships. Subsequently and in line with similar studies two respondent demographic variables were adopted which relate to level of education (number of formal years of secondary and tertiary education completed), and work experience (number of years that the respondent has in formal employment).

3.3 Data analysis

The data analysis consisted of instrument validity and reliability testing, calculating descriptives and correlational coefficient, while hypotheses were assessed using multiple regression analyses. Common-method bias (CMB) (Podsakoff et al., 2003) was also assessed due to the nature of the survey data. In this regard a small sample of respondents (n = 15) were used for pilot testing the instrument (Cooper and Schindler, 2014), which was slightly adjusted in wording to confirm unencumbered understanding. Statistically, a "single principal component analysis (PCA), using Harman's one-factor test was used on

all measurement items" (Podsakoff et al., 2003). These results showed eigenvalues > 1.0 for the three components which emerged, accounting for 63.9% of the total variance, and the first factor only represented 19.14% – suggesting little or no indication of CMB.

Additionally, to determine the effect of the control variables, "comparisons of means tests were carried out to evaluate the effects of single control variables on the DV in separation to other control variables" (Cooper and Schindler, 2014). These results indicated no significant results in terms of SME size and age, and consequently were not used in the correlational and regression analyses.

4 Results

4.1 Validity and reliability testing

To analyse the data, an 'exploratory factor analysis' (EFA) was computed to assess all constructs of interest in this study. All the 'Kaiser-Meyer-Olkin (KMO) measures of sampling adequacy' values (0.828), were greater than the minimum require value of at least 0.5. Similarly, the 'Bartlett's test of sphericity' was significant (approx. chi-square = 207.431; $p \leq 0.000$) across all of the constructs, which shows that the items within each construct were correlated to each other, as required for factor analysis (Cooper and Schindler, 2014). EFA using the "principal axis factoring method with Harris Kaiser Case II rotation was used where factors with eigenvalues > 1 were retained and factor loadings of ≥ 0.5 were retained and regarded as significant" (Cooper and Schindler, 2014). In some cases 'cross/multiple loadings' were observed especially on items in relation to the IV – BRDGSC and the DV – AFC. Consequently, several items were eliminated because they either had communality (<0.3) or had factor loading less than 0.5 and were loading onto more than one factor. A final pattern matrix revealed a three factor model which explained a total of 69.23% of the variance. Taken together, these results provided suitable evidence of convergent validity and reliability. To test the reliabilities for each factor, Cronbach's alpha was calculated with the following results generating values greater than the required minimum of 0.7 (Cooper and Schindler, 2014): factor 1: BRDGSC ($\alpha = 0.942$); factor 2: BONDSC ($\alpha = 0.812$); factor 3: CWPT ($\alpha = 0.713$); factor 4: AFC ($\alpha = 0.772$).

4.2 Descriptives and correlations

A correlation matrix is displayed in Table 1 which displays mean scores, standard deviations and Pearson correlation coefficients of the study factors. The highest mean score observed was for BRDGSC (M = 3.913, SD = 0.956), CWPT (M = 3.001, SD = 0.101), BONDSC (M = 2.751, SD = 0.989) and AFC (M = 2.814, SD = 0.908), respectively. Apart from the positive and significant correlations the "Pearson's correlation coefficients are relatively high indicating high levels of associations between the variables which are all significant at the 0.05 level" (Cooper and Schindler, 2014).

Table 1 Descriptives and correlations

Factors		*Mean*	*Std. dev.*	*1*	*2*	*3*	*4*
1	Bonding social capital	2.751	0.989	1			
2	Bridging social capital	3.913	0.956	0.509**	1		
3	Crowdfunding platforms	3.001	0,932	0.253**	0.303**	1	
4	Access to financial capital	2.814	0.908	0.428**	0.277**	0.580**	1

Notes: **correlation is significant at the 0.05 level (two-tailed).

4.3 Hypotheses testing

The regression summary results are presented insofar hypotheses testing is concerned which are shown in Table 2. The study regression model was formulated to reflect the study hypotheses which focused on the DV – AFC and the effect of the predictors – 'bonding social capital, bridging social capital, and crowdfunding platforms'. The summary of the overall regression results in Table 2 shows an adjusted R^2 of 0.195 means that this model explains 19.5% variance in terms of the predictors on the DV. In the ANOVA section an overall significant F value (4.707; $p < 0.000$).

Table 2 Regression results: model summary, ANOVA and coefficients

Model summary[b]					
Model	*R*	*R square*	*Adjusted R square*	*Std. error of the estimate*	*Durbin-Watson*
1	0.497[a]	0.247	0.195	0.89723	1.666

ANOVA[b]						
Model		*Sum of squares*	*df*	*Mean square*	*F*	*Sig.*
1	Regression	22.734	6	3.789	4.707	0.000[a]
	Residual	69.233	86	0.805		
	Total	91.967	92			

Coefficients[b]								
Model		*Unstandardised coefficients*		*Standardised coefficients*	*t*	*Sig.*	*Collinearity statistics*	
		B	*Std. error*	*Beta*			*Tolerance*	*VIF*
1	(Constant)	0.147	0.635		0.205	0.875		
	Crowdfunding platforms	0.311	0.125	0.316	2.488	0.015	0.544	1.837
	Bonding social capital	0.075	0.108	0.075	0.698	0.487	0.756	1.323
	Bridging social capital	–0.136	0.147	–0.133	–0.925	0.357	0.424	2.356

Notes: [a]predictors: (constant), bonding social capital, bridging social capital, crowdfunding platforms.
[b]dependent variable: access to financial capital.

In terms of H1 where a positive relationship between bonding social capital using crowdfunding platforms, and AFC was predicted, the beta coefficients indicate a positive and significant value of $\beta = 0.316$ ($p < 0.05$) for crowdfunding platforms, but a positive and non-significant value of $\beta = 0.075$ ($p > 0.05$) for bonding social capital in terms of AFC. These results provide partial support for H1.

In terms of H2 where a positive relationship between bridging social capital, using crowdfunding platforms, and AFC was predicted, the beta coefficients indicate a positive and significant value of $\beta = 0.316$ ($p < 0.05$) for crowdfunding platforms but a negative and non-significant value of $\beta = –0.133$ ($p > 0.05$) for bonding social capital in terms of AFC. These results mean that H2 is partially supported.

Additionally, "collinearity diagnostics were calculated and show variable inflation factor (VIF) values with the following tolerance and VIF values": crowdfunding platforms = 0.544 (1.837); bonding social capital = 0.756 (1.323); bridging social capital = 0.424 (2.356). All of "VIF scores are >1, which are interpreted as acceptable and can be interpreted as no incidence of multicollinearity amongst study variables" (Cooper and Schindler, 2014).

5 Discussion

In recognising the importance of research on women entrepreneurs' social capital, this article empirically investigated the impact of using crowdfunding in terms of "bonding and bridging social capital on AFC" in South Africa. The positive results for crowdfunding platforms in terms of bonding and bridging social capital is important since crowdfunding is increasingly being viewed as a pioneering means to access finance for entrepreneurs. Considering the study context, where many women-owned businesses are not served or remain underserved by financial institutions (Rooks and Solano, 2018), crowdfunding is a vital tool which allows women entrepreneurs to obtain tangible and intangible benefits such as increasing their access to raising monetary resources and obtaining feedback on new products and marketing campaigns. Similar findings indicate that the ability of entrepreneurs to leverage social media networks allows funding to be secured via online platforms and ultimately increases their firm performance (Lukkarinenn et al., 2016). Moreover, social networks play an increasingly important role in the funding of new ventures, as information on the founder or organisation can add legitimacy and facilitate access to crowdfunding (Brem et al., 2016). Such findings confirm that digital technologies facilitate entrepreneurial activities among peers, customers, business partners, investors, while at the same time, reducing perceived uncertainty, developing interpersonal relationships and influencing access to information and financial capital (Kraus et al., 2019).

In terms of bonding social capital, only partial support was identified in terms of H1 where a positive relationship between bonding social capital, using crowdfunding platforms, and AFC was predicted. These findings are contradictory with similar studies broadly focused on how the internet facilitates the creation of bonding social capital which can facilitate the start of a business venture, encourage business growth and can provide the entrepreneur with access to finance, professional advice and human capital during the start-up phase (Agrawal et al., 2015). A plausible reason insofar the present study revealed non-significant results in terms of bonding social capital and financial capital is that although women entrepreneurs' networks tend to characterised by

homogeneous networks, made up of personal relationships such as family or circles of close friends, these networks provide fewer advantages for accessing finance (Cabrera and Mauricio, 2017).

Similarly, for bridging social capital, with respect to H2 where a positive relationship between bridging social capital, using crowdfunding platforms, and AFC was predicted, non-significant results were observed. Possibly, since women entrepreneurs face challenges of financing and are often discriminated against by financial institutions (Lv and Xie, 2018), bridging social capital in the form of weak ties, loose in nature and which provide no emotional support, are not advantageous in accessing financial capital.

Since women entrepreneurs still face social barriers in the form of "gendered attitudes and practices this prevents them entrance and acceptance into the entrepreneurial community and gaining work experience" (Stead, 2017). Studies in Kenya and other developing countries confirm that women face more difficulty in accessing credit due to traditional beliefs and gender stereotypes (Rooks and Solano, 2018).

6 Conclusions

By empirically investigating the connection between social capital in the form of bridging and bonding, using crowdfunding platforms, and AFC, this article advances the emerging literature on digital entrepreneurship and women entrepreneurship in terms of social capital. This is important considering it has been noted that the apparent efficacy of networking in promoting entrepreneurship depends on a number of understudied and typically overlooked boundary conditions that must be prevalent for social capital to have an effect (Light and Dana, 2013). The article has paved the way to increase understanding of how digital technologies in the form of crowdfunding call for a new era in understanding women entrepreneurship in relation to social capital.

The study findings can also be interpreted in terms of their contextual relevance where in an African context only a minor percentage of women entrepreneurs are aware of how to utilise technology to advance their networks and secure access to finance. Furthermore a lack of access to technology inhibits these businesses from using technology and associated platforms to access the market and promote their offerings (Corten and Norbutas, 2018). In South Africa, "a lack of suitable skills, weak supporting infrastructure, inadequate policy and systems, as well as cultural barriers are among the range of issues that obstruct the full potential of technology and the digital economy into entrepreneurial development outcomes" [Urban, (2019), p.310]. Scholars further note, "venture creation is gendered in and of itself, and historically, the focus has been on masculine processes and behaviour. Women are more likely than men to balance work and family roles, handle conflict, and to consider time and space constraints as they create new firms" (Brush and Greene, 2016). These obstacles are confirmed in the SSA region where typically low levels of social legitimacy and appreciation of women entrepreneurs have been highlighted as barriers to entrepreneurial development (World Bank, 2018). Undeniably in many African markets, entrepreneurship itself is "gendered in many different ways" but nonetheless women entrepreneurs can also impact on their contexts as well (Welter, 2020), and several recommendations highlighting the role of policy makers and women entrepreneurs themselves are offered.

From a policy perspective, to increase women participation in digital entrepreneurship, ICT policies by government need to enhance widespread access to broadband and smartphones, as crowdfunding is a driving force of entrepreneurship and makes the identification of opportunities easier through the development and dissemination of ideas and information. Women entrepreneurs must realise that digitalisation can enhance their entrepreneurial performance and business opportunities through growing networks and opening opportunities across geographical and socio-economic barriers. In this regard it is recommended that governments focus on using technology to solve problems in Africa by addressing issues relating to broader access, pricing and education in using mobile technologies and broadband to address unemployment and liberalise infrastructure and ICT frameworks. Through carefully crafted policy interventions, governments can make mobile technology available to all aspiring women entrepreneurs who can access these services, acquire skills, and build networks that promote sustainable development. Policy makers in South Africa need to create specific mechanisms for fostering women entrepreneurship, which include an effective and efficient ecosystem of intervention agencies and financial services targeting women in both formal and informal areas (Al-Omoush et al., 2020; World Bank, 2018).

There are limitations to the study, which include its cross-sectional nature which does not allow for causal inferences to be made with regard to social capital and AFC. Longitudinal investigations are required to explore over time any enduring relationship between social capital, crowdfunding and AFC. Moreover the study suffers from the a limited sample size where difficulties in ascertaining the population of women entrepreneurs using crowdfunding platforms in South Africa meant that random sampling was not plausible, and subsequently representativeness was compromised. Future research could identify moderating variables in an African emerging country context, such as corruption which may influence social capital bridging and bonding factors due to nepotism and favouritism. While using a survey can be deemed to be insufficient to truly gain a holistic understanding of the entrepreneurial process (Dana and Dana, 2005), future studies could use case studies to further examine how unique contexts, such as African markets, are gendered and how they are constructed in gendered ways, as well as how women entrepreneurs can impact on their contexts (Welter, 2020). Lastly, researchers can study the complexities of fostering social capital amongst women entrepreneurship in a digital era in Africa and other emerging economies by investigating specific country contingency variables such as institutional voids and scarce infrastructure and resources challenges in these countries.

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