UNIVERSITY OF KWAZULU-NATAL

ENABLERS OF KNOWLEDGE SHARING BEHAVIOUR IN FEMALE SMME NETWORKS

By

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Declaration

I, Paula Hall, declare that;

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Abstract

Support for female entrepreneurs in South Africa has numerous economic and social benefits. Female SMME networks have arisen as an important support mechanism to increase female entrepreneurs' social capital and enable knowledge sharing. The purpose of this study was to determine the nature, extent and enablers of knowledge sharing in female SMME networks. Using a quantitative questionnaire, this study statistically analysed female SMME networks members' knowledge sharing behaviour (KSB) in relation to four key enablers derived from social capital theory. The study also analysed the type of knowledge shared and sought to determine if members' KSB depended on demographic or business-related factors. Female SMME network members were found to display a high degree of KSB, particularly sharing of tacit knowledge. Two of the knowledge sharing enablers in the relational dimension of social capital, trust and social identity, were found to be highly correlated with members' KSB, as did shared goals in the cognitive dimension. Surprisingly, social media usage, in the structural dimension, was found to have only a moderate correlation with KSB. This may be due to the members' preference to share more tacit knowledge through socialisation than explicit knowledge through social media. Another unexpected finding was that KSB was found not to be dependent on member's age, experience or education, nor on the number of employees or business sector of the SMME. This suggests that female SMME networks are conducive to knowledge sharing irrespective of the nature of the businesses or types of members. A multiple regression analysis between social capital, as a single aggregated construct made up of the four enablers, and KSB, found that social capital is a good predictor of KSB. However, these findings were limited to a small sample of members of SMME networks in KwaZulu-Natal - further studies are needed to establish more generalisable results. This research contributes to the study of KSB in inter-organisational networks, using a social capital framework, particularly in the context of female SMME networks. Given the importance of knowledge sharing for business success, female SMME networks should be supported in order to develop female entrepreneurs and their contribution to the South African economy.

Keywords: Knowledge sharing behaviour; female entrepreneurs; SMME Networks; Social capital; inter-organisational networks; knowledge types

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Chapter 1. INTRODUCTION

1.1. Introduction to the Study

How do female entrepreneurs in South Africa empower themselves to succeed in a male-dominated (Deborah, Wilhelmina, Oyelana, & Ibrahim, 2015, p. 37), knowledge intensive economy? Inter-organisational collaboration is essential with the pace of change required of businesses in the fourth industrial revolution (WEF, 2016, p. 27) and female small, medium and micro enterprise (SMME) networks need collaborative opportunities that are strengthened by the close bond women share in such networks (Ridgeway & Smith-Lovin, 1999, p. 196). SMME networks are formal or informal business networks for micro to medium size businesses that facilitate inter-organisational knowledge sharing. Female entrepreneurs are essential to growing the economy and alleviating the high unemployment rate in South Africa – measured at 27,7% currently (StatsSA, 2017, p. 8). However, female early-stage entrepreneurship has declined recently, with South Africa lagging behind other African countries in terms of entrepreneurship (Herrington, Kew, & Mwanga, 2016, p. 4). As the world economy becomes less labour-intensive and more knowledge based (Powell & Snellman, 2004, p. 199), knowledge becomes a key driver of economic performance (Blankley & Booyens, 2010, p. 1). This requires a better understanding of knowledge networks. Knowledge sharing among members of a business network, such as this study is concerned with, needs to be considered in the context of inter-organisational knowledge-sharing. Networks are based on relationships, especially informal business networks, and facilitate knowledge sharing (McLeod, 2010, p. 25). With the increased popularity of social media for business purposes, social networks are a key tool for the economic empowerment of women entrepreneurs (Dawa & Namatovu, 2015, p. 11; Shanmuga & Sakthi, 2015, p. 158). Gender differences have been found in social networking among entrepreneurs (Upton, Broming, & Upton, 2014, p. 33). Therefore, determining the effect networks have on knowledge sharing, particularly in a South African, female-led SMME context, would be of benefit.

This chapter starts with a background to the research issue, providing context and details on entrepreneurship in South Africa, from a female network perspective. The research problem follows, culminating in the problem statement, which underpins the study. The purpose of the research, together with objectives and hypotheses, provide specific direction for the study follow. A brief overview of the research methodology

follows, as a precursor to Chapter 3, in order to explain how the research objectives were met. Finally, the contribution section of this chapter is presented, which describes the benefits of the study.

1.2. Background and Motivation for the Study

In a developing economy such as South Africa, entrepreneurial activity is necessary to drive economic growth through the establishment and support of Small, Medium and Micro-sized Enterprises (SMMEs) (Hussain, Si, & Ahmed, 2010, p. 1).In South Africa, according to the 2004 National Small Business Amendment Act, as long as a business fulfils one of the following criteria, it is considered a small business: fewer than 200 employees; assets below R23 million; less than R64 million in turnover per year; and having the owner as manager (Erasmus, Strydom, & Rudansky-Kloppers, 2016, p. 63). . South Africa has recognised the importance of small business with the formulation of the Ministry of Small Business Development in 2014 in response to the high unemployment rate as well as the recognition of entrepreneurial activity as a way to alleviate this (SEDA, 2016, p. 5). Government has also recently started a department to promote entrepreneurship for students (EDHE, 2019).

In 2016, The World Economic Forum identified that strategies that develop female talent are important for the future of the South African workforce (WEF, 2016, p. 115). Gender equity in terms of entrepreneurial opportunity is relatively good in South Africa, with 7 early stage female entrepreneurs for every 10 males in 2016. However, entrepreneurship activity is lower for females and has been falling recently (Herrington et al., 2016, p. 34). Female entrepreneurs in South Africa have often been driven by necessity to start micro-enterprises, for survival purposes in order to support their families and communities (Mandipaka, 2014, p. 127). Lately, they have been encouraged to register their businesses formally, adding a pull effect (Pines, Lerner, & Schwartz, 2010, p. 188). SMMEs have been practicing some form of knowledge management more recently, although not always formally and explicitly (Chan & Chee-Kwong, 2008, p. 87). A number of informal and formal business networks have arisen in response to the need to share knowledge, facilitated by the ease of creating virtual networks (Cao, Guo, Liu, & Gu, 2015, p. 353; Shanmuga & Sakthi, 2015, p. 158). The move towards a more knowledge-based economy with an emphasis on intellectual capital as a resource has placed a premium on the way people deal with knowledge at work and their ability to assimilate and share that knowledge (Blankley & Booyens, 2010, p. 1; Powell & Snellman, 2004, p. 200).

Formal, state-lead networks and informal business networks specifically designed for women have become more prevalent in South Africa (SEDA, p. 6). The importance of female entrepreneurial networks needs to be highlighted, not only as a driver of economic growth but to improve the success of female entrepreneurs and improve diversity in business start-ups (Upton et al., 2014, p. 37). Access to funding and training and types of occupations are more limited for female entrepreneurs, who are therefore disadvantaged in terms of resources and options when compared to male entrepreneurs (Botha, Nieman, & Van Vuuren, 2007, p. 164; Mandipaka, 2014, p. 127). There are also gender differences in the way knowledge is shared, with females tending to be more open to knowledge sharing than males (Oke, 2013, p. 5). According to the Department of Trade and Industry (2011, p. 16), for women to be successful in enterprise development they need access to supportive networks and expect such membership of network organisations to have strategic impact on their businesses. Social networks are important in developing countries where resources are limited, especially for female entrepreneurs (Dawa & Namatovu, 2015, p. 12; Ekpe, Mat, & Ekpe, 2015, p. 362; Shanmuga & Sakthi, 2015, p. 158). Thus, the focus of this research is female networks specifically.

Knowledge management includes knowledge acquisition, transfer, sharing and assimilation (Jashapara, 2011, p. 14), with knowledge sharing being identified as a particularly important component (Wang, Noe, & Wang, 2014, p. 979). Knowledge can be conceived of as an object, in that it can be transferred and externalised (Paulin & Suneson, 2012, p. 87). Knowledge sharing is the joint creation of new knowledge that occurs when people exchange their knowledge (Naicker, Govender, & Naidoo, 2014, p. 27). Here, knowledge is a social construct depending on the context in which it is being shared (Alavi & Leidner, 2001, p. 127; Paulin & Suneson, 2012, p. 86). Knowledge sharing allows individual knowledge to be made collective, in that groups can then use it (Van den Hooff, Schouten, & Simonovski, 2012, p. 3). This knowledge can be tacit and/or explicit where tacit knowledge is more personal and contextual, and sourced from people's interactions. Tacit knowledge sharing occurs during socialisation through networking (Omotayo, 2015, p. 6). This is as opposed to explicit knowledge which is more formal, objective and can be codified and stored. Explicit knowledge can be captured and shared through information technology (Jashapara, 2011, p. 50). Knowledge sharing spirals through tacit knowledge sharing when people socialise, capturing, combining then internalising this shared knowledge (Nonaka & von Krogh, 2009, p. 636; Omotayo, 2015, p. 6). Globally, knowledge management has gained formal acceptance in larger companies as a key resource for sustainable

competitive advantage (Becerra-Fernandez & Sabherwal, 2014, p. 9). As an intellectual asset, rather than a physical one, management of knowledge and its various processes has gained traction in the knowledge-based economy (Omotayo, 2015, p. 1).

From an organisational viewpoint, knowledge sharing helps to improve innovation and competencies in a cost effective and time-efficient manner (Van Der Meer, 2014, p. 16). Knowledge sharing can be enhanced as SMME networks allow for collaboration and access to diverse knowledge and differing viewpoints (Van Der Meer, 2014, p. 15). Hemsley and Mason (2013, p. 157) contend that individuals in an organisational setting extend their knowledge sharing over social media beyond the workplace and that social media has changed the knowledge management paradigm in terms of how knowledge is shared and created. In most SMME networks, the SMME is represented by the entrepreneur, which simplifies inter-organisational knowledge sharing.

Much of the current research into inter-organisational knowledge sharing has focused on industry-specific relationships or formal collaborations (Van Der Meer, 2014, p. 30). With increased globalisation and local competition, the ability of SMMEs to share knowledge can be a source of competitive advantage (Jashapara, 2011, p. 10). Although there has been research internationally into inter-organisational knowledge sharing in SMMEs, for example Carlsson (2003), Moingeon, Quélin, Dalsace, and Lumineau (2006) and Lechner & Dowling (2003), there has been little on this topic in the context of SMME networks that are specifically designed to assist female-led SMMEs, particularly in the South African context.

The theoretical background for this study firstly rests on the concept of Ba, which is a shared space, virtual or physical, where relationships can develop, allowing for knowledge creation (Nonaka & Konno, 1998, p. 43). These shared spaces have a number of enabling factors that enhance knowledge sharing, including technology enablers such as social media that should be considered at the inter-organisational level, as in an SMME network (Choo & Neto, 2010, p. 147). Secondly, Social capital theory is relevant as its central tenet concerns the value embedded in social relationship networks, such as female SMME networks. Nahapiet and Ghoshal (1998, p. 244) conceived of three dimensions of social capital being: relational, cognitive and structural. Of relevance to this study are factors applicable to knowledge sharing among female entrepreneurs in SMME networks, specifically, in the relational dimension, trust and social identity; in the cognitive dimension, shared goals; and from

the structural dimension, social media usage (Chiu, Hsu, & Wang, 2006; Chow & Chan, 2008; Nahapiet & Ghoshal, 1998).

1.3. The Research Problem

In a knowledge economy, sharing of knowledge and networking among small business owners can create a sustainable competitive advantage (Becerra-Fernandez & Sabherwal, 2010, p. 4), making the difference between success and failure. The problem is that female owners of small businesses tend to have less social capital than their male counterparts, and have less opportunity to share knowledge through networking (Dawa & Namatovu, 2015, p. 12; Herrington et al., 2016, p. 34; Oke, 2013, p. 2). Networks specially designed to assist female entrepreneurs have arisen with the increased use of technology and social media (Abel, 2016, p. 39). In South Africa, a number of these networks have been created to assist female entrepreneurs, in recognition of the need to support entrepreneurship in the context of the high unemployment rate in South Africa and the historical lack of support specifically for female entrepreneurs (DTI, 2011, p. 13; SEDA, p. 6).

As Lefebvre, Sorenson, Henchion, and Gellynck (2016, p. 570) contend, social capital theory is a logical choice in researching knowledge sharing in networks, due to the integral role social relationships play in both knowledge sharing behaviour and in networks. Lefebvre et al. (2016, p. 577) also support the need for more research into the antecedents of social capital which this study seeks to address. Relational social capital develops from personal relationships and includes trust and social identity as key facets; cognitive social capital includes shared goals, while structural social capital refers to the connections between members in the form of social ties from social media usage (Nahapiet & Ghoshal, 1998, p. 244). Although there has been extensive research into knowledge sharing in the context of social capital, there has been little research into knowledge sharing behaviour in formal female SMME networks, particularly in the South African context (Naicker, Le Roux, Bruwer, & Bruwer, 2017, p. 55). Knowledge sharing behaviour in these networks is currently unknown (Abel, 2016, p. 24). There are a number of enabling factors for knowledge sharing congruent with social capital theory, which forms the conceptual framework for this study (Chiu et al., 2006; de Alvarenga Neto & Chun, 2011; Nahapiet & Ghoshal, 1998). This is particularly important in South Africa where the unemployment rate is so high and a more enabling business environment for SMMEs is a priority (Herrington et al., 2016). Specifically, formal female networks making use of social networking for virtual

networking as well as geographic proximity for in-person networking need to be considered.

Problem statement: The nature and extent of knowledge sharing behaviour in female SMME networks and the enablers of this behaviour are currently unknown.

1.4. Research Purpose

The purpose of this research is to examine knowledge sharing behavior in female-led SMMEs. Specifically, the research objectives are:

1. To determine the extent and nature of knowledge sharing behaviour in female SMME networks
2. To determine the extent to which trust as a dimension of relational capital enables knowledge sharing behavior in female SMME networks.
3. To determine the extent to which shared social identity as a dimension of relational capital enables knowledge sharing behaviour in female SMME networks.
4. To determine the extent to which use of the SMME network's social media as a dimension of structural capital enables knowledge sharing behavior in female SMME networks.
5. To determine the extent to which shared goals of SMME network members as a dimension of cognitive capital enables knowledge sharing behaviour in female SMME networks.
6. To determine whether demographic (age and education) and business related (length in business, type of industry, number of employees) factors affect knowledge sharing behaviour.

From the above, the research model can be conceptualised. The relationships between the enabling factors based on the social capital theory model and knowledge sharing behavior are shown. Through support from the literature described above, the specific variables of Trust, Social Identity, Social Media Usage and Shared Goals are depicted in the model. To test the role of the enablers, hypotheses and a conceptual model were developed, as depicted below. The development of the hypotheses and conceptual model are detailed in Chapter 2.

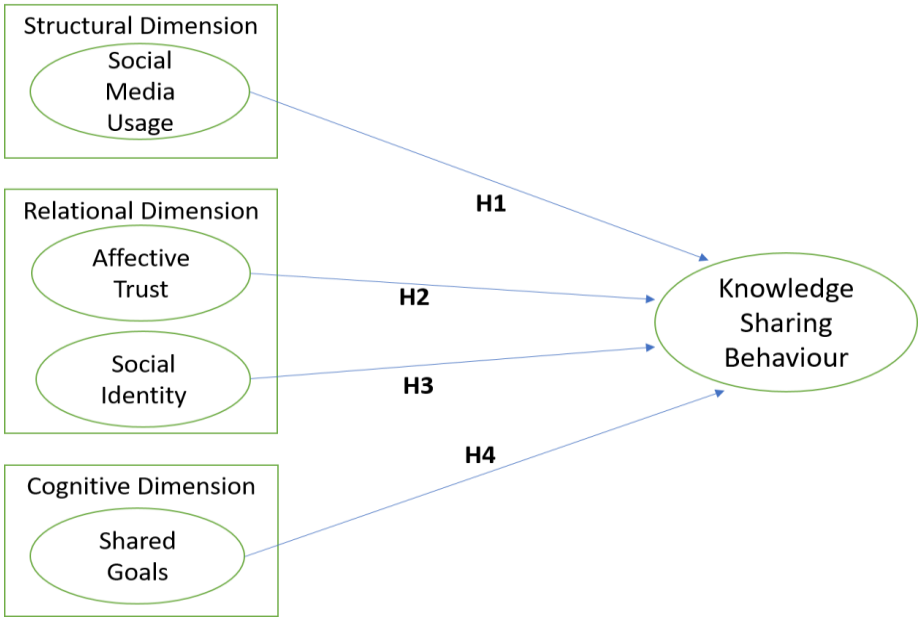

Figure 1 Proposed Research Model

The first four constructs on the left of the model are directly related to the knowledge sharing enabling variables and are represented in the applicable dimension of social capital. These will be the co-variate independent variables. Knowledge sharing behavior is the dependent variable.

1.5. Research Methodology

The research strategy to best meet the research objectives and questions in the context of the conceptual model is survey research. Specifically, primary data was gathered by means of a cross-sectional survey. This research follows a post-positivist paradigm. The relationships between the knowledge enabling variables, as independent variables, and knowledge sharing behaviour, as the dependent variable were examined objectively through quantitative research. Further insight into knowledge sharing in female SMME networks through a more subjectively determined qualitative lens such as follow-up interviews, was beyond the scope of this research. This study was therefore in the form of a quantitative questionnaire where the conceptual model was tested.

The sampling frame came from the membership lists of the three female SMME networks based in KwaZulu Natal, which have formal social networks. Given the typically poor response rate for a request of this nature, all members of the networks

were sampled, thus the sampling strategy was a census. Data was collected by means of a self-administered questionnaire, since this tool is ideal for collecting behavioral and attitudinal, descriptive data (Sekaran & Bougie, 2016). The electronic questionnaire was created using Google Forms, containing questions adapted from validated scales developed by previous researchers. The questionnaire was pretested on three representatives of one of the female SMME networks – Women in Business, to ensure that respondents understood the questions as intended. The data collected from the questionnaire was coded and captured into SPSS, which was used for descriptive and inferential analysis of the respondents' data. Data about each knowledge enabling factor in the questionnaire, tested with a series of Likert scales questions, was summated. The composite scores were analysed using descriptive statistics, including the mean and mode for central tendency. A number of inferential tests determined the relationship between the knowledge sharing enablers (the independent variables) and knowledge sharing behaviour (the dependent variable).

1.6. Justification/Rationale

The future of work and business in light of knowledge-based economies in the fourth industrial revolution (WEF, 2018), together with the rise of women empowerment provides the basis for the justification for this study. Specifically, understanding the extent and nature of knowledge sharing in female SMME networks provides impetus for the existence and importance of these networks. Further, given the level of government support for female entrepreneurs and support for female SMME networks (SEDA), determining what enables knowledge sharing behavior could assist in the development and success of female-run businesses to alleviate the high unemployment in South Africa.

1.7. Delimitations of the Study

The study was limited to members of three organised female-based SMME networks in KwaZulu-Natal, South Africa that have an online social media presence: Businesswomen's Association (KZN), Women in Business and KZN Women in Business.

1.8. Contribution of the Study

Little is known about the factors that enable knowledge sharing behaviour in female-only SMME networks in South Africa. Enhancing knowledge sharing behavior will contribute to the success of female-based SMME networks, adding practical value for NGOs, governments and others interested in growing entrepreneurship in developing economies. This study tests a new conceptual model devised to link specific knowledge enablers and knowledge sharing behaviour, having the potential to add value to the existing literature and research in the area.

Results from the study contribute to the field of knowledge sharing in the context of inter-organisational sharing, specifically among female-owned small businesses that belong to formal networks designed to support female SMMEs. These networks are unique in terms of their composition and purpose, and the extent and nature of knowledge sharing behaviour in these networks has not been adequately researched previously, especially in a South African context. With support for entrepreneurs and SMMEs, particularly under-represented groups such as women, being a priority for South African government policy, the results of this research will assist in determining factors that enable knowledge sharing. Knowledge sharing has been previously linked to organisational performance, therefore the results would also be of value to the small business owner as all business owners seek to improve profitability through enhanced performance. Having consulted the organisers of female SMME networks during the research, they were particularly interested in the detailed results to gain insight into their networks and their members, their perceptions, and knowledge sharing behaviour. The research used the theory of social capital and related it to knowledge sharing, and therefore contributes to the growing body of studies into the dimensions of social capital and how they affect knowledge management.

1.9. Structure of the Dissertation

The next chapter provides analysis of the literature dealing with networks, knowledge sharing, social capital theory and the dimensions of the theory that were tested in the study. The chapter shows how the conceptual model for the study was developed and details the links between the variables. Chapter 3 describes the methodology, from the paradigm driving the research to the detailed data collection and data analysis procedures. This is followed by the detailed findings of the research, which is presented according to the objectives of the study. Interpretation and discussion of the

results comprise Chapter 6, where the conceptual model is presented in terms of relationships tested between the dimensions of social capital and how they contribute to KSB. Recommendations for further research given the results, and limitations of research based on sampling, generalisability and scale development are presented in the closing chapter – Conclusions.

Chapter 2. REVIEW OF RELATED LITERATURE, THEORETICAL FOUNDATIONS AND DEVELOPMENT OF THE CONCEPTUAL FRAMEWORK

This literature review begins with conceptualisation of knowledge and previous research into knowledge sharing and knowledge sharing behaviour. The review continues with a review of studies on small, medium and micro enterprise (SMME) networks, and how knowledge sharing has occurred within them. The gaps in the literature were explored and highlighted, emphasising the relevance of this study, particularly gaps related to previous research in female SMME networks. A theoretical foundation is then presented, from which enablers of knowledge sharing are drawn and conceptualised, resulting in the final conceptual model for the study.

2.1. The Nature of Knowledge

Before a review of knowledge sharing can ensue, it is necessary to review the various, often conflicting, definitions of knowledge. This complexity can be explained by the multi-disciplinary origins of the concept, including philosophy, business strategy, computer science and human resource management (Jashapara, 2011, p. 12). Three perspectives from the literature are reviewed here: knowledge as transformed information and data – a predominantly Information Technology (IT) perspective; the subjective versus objective view, a mostly philosophical perspective; and finally the tacit versus explicit view, a managerial perspective, which is most useful to this study.

2.1.1. The Data-Information-Knowledge View

One commonly held view of knowledge is that it is the pinnacle of the data, information, knowledge pyramid, where knowledge is the application of information, and information is organised data (Becerra-Fernandez & Sabherwal, 2014, p. 20; Jashapara, 2011, p. 16). Eminent authors, among the first to take this viewpoint, are Davenport and Prusak (1998, p. 1), who suggest that being able to distinguish between the terms can be the difference between organisational success or failure. This viewpoint has been extended to depict a more complex, non-linear relationship where knowledge can transform data into information and make information more valuable by combining or sharing it (Becerra-Fernandez & Sabherwal, 2014, p. 20).

2.1.2. The Subjective Versus Objective View of Knowledge

In the subjective view, knowledge is seen as being part of the human experience of reality, it is therefore a state of mind, residing in groups and practiced in organisations. This is as opposed to the objective view, which views knowledge as an independent object necessary for access to information, and as a capability for action (Becerra-Fernandez & Sabherwal, 2014, p. 23). This research subscribes to both views, since the objective perspective supports knowledge sharing through networks while the subjective view acknowledges the social context of knowledge sharing.

2.1.3. Tacit Versus Explicit Knowledge

This division was first postulated by Polyani in 1966 and was brought into the mainstream in the context of organisational knowledge by Nonaka (2009, p. 636). Explicit knowledge can be captured, transferred and formally shared, while tacit knowledge is more difficult to formalise, express, and share, often derived from individual experiences and intuition (Becerra-Fernandez & Sabherwal, 2014, p. 25). Explicit knowledge can be linked with the objective view above, and tacit with the subjective view. Tacit knowledge of is of particular relevance in knowledge sharing among female members of networks (Durbin, 2011, p. 109). This distinction is of particular relevance to this research as the conversion of tacit to explicit knowledge and vice versa forms part of the conceptualisation of knowledge sharing, and is discussed further under the theoretical framework section.

2.2. Knowledge Sharing

Knowledge sharing is considered a subset of the domain of knowledge management, which also includes the creation, application and leveraging of knowledge (Becerra-Fernandez & Sabherwal, 2014, p. 4; Carlsson, 2003, p. 196; Tohidinia & Mosakhani, 2010, p. 611). Jashapara defines knowledge management as:

“the effective learning processes associated with the exploration, exploitation and sharing of human knowledge (tacit and explicit) that use appropriate technology and cultural environments to embrace an organisation’s intellectual capital and performance” (Jashapara, 2011, p. 14)

Knowledge sharing is recognised as the most important aspect of knowledge management (Hendriks, 1999, p. 91; Wang et al., 2014, p. 979), as knowledge becomes particularly useful if it can be shared (Paraponaris & Sigal, 2015, p. 2). With global business recognising the value of knowledge resources, knowledge management is gaining traction as a significant driver of business success and sustainable competitive advantage, especially in light of the rapid growth in technologies such as social media and artificial intelligence (Becerra-Fernandez & Sabherwal, 2014, p. 9; Omotayo, 2015, p. 3). Discovering and applying knowledge through these technologies yields more positive business results if the resultant knowledge can be shared, imbuing knowledge sharing with strategic importance (Ozlati, 2015, p. 191; Paraponaris & Sigal, 2015, p. 2). This research is focused specifically on knowledge sharing.

2.2.1. The Benefits of Knowledge Sharing to Organisational Performance

Many studies demonstrate the benefits of knowledge sharing, and particularly inter-organisational knowledge sharing, for organisational innovation, performance and competitive advantage, (Cao et al., 2015, p. 352; Easterby-Smith & Tsang, 2008, p. 677; Lefebvre et al., 2016, p. 570; Mc Manus, Ragab, Arisha, & Mulhall, 2016, p. 588; Tohidinia & Mosakhani, 2010, p. 611; van Wijk, Jansen, & Lyles, 2008, p. 5). Results of a meta-analysis by van Wijk et al. (2008, p. 5) provided evidence of the mediating role knowledge transfer plays with social capital and financial performance. Knowledge sharing also empowers entrepreneurs to deal with business complexity and uncertainty (Mc Manus et al., 2016, p. 587). The large amount of evidence of the benefits of knowledge sharing gives credence to this study into the enablers of knowledge sharing, where research is less prevalent.

2.2.2. Knowledge Sharing Versus Knowledge Transfer

Early researchers on knowledge and the sharing and transfer of knowledge are Polanyi and Nonaka, who used the terms interchangeably (Paulin & Suneson, 2012, p. 84). However, knowledge transfer involves the movement of knowledge between parties, where one party is affected by the experiences of the other, implying that the identity of the parties is known and that the transfer is a distinct event (Argote & Ingram, 2000, p. 151). Mariotti (2005, p. 25) suggested that a simple transfer of resources, including

knowledge, is however, not sufficient, and that there rather needs to be an ongoing social engagement for knowledge sharing. A simple, yet effective view of knowledge sharing it that it is a way of converting individual knowledge into collective knowledge (Van den Hooff et al., 2012, p. 2). Mushonga (2014, p. 26) contends that for effective knowledge sharing to occur, transfer of knowledge is required. For the purposes of this study, knowledge sharing is viewed as a social construct, as conceived by Paulin & Suneson (2012, p. 87), that involves the transfer of tacit and explicit knowledge, person to person or with the assistance of technology (Van den Hooff et al., 2012, p. 3; Wang et al., 2014, p. 89).

2.2.3. Knowledge Sharing Behaviour

Knowledge sharing behaviour supports the conversion of social, tacit knowledge that can be gained in a social network, into individual, private knowledge that can be used by an entrepreneur (Ma & Chan, 2014, p. 52). Knowledge sharing behaviour cannot be forced, and understanding the voluntary nature of this behaviour gives credence to the need for this study. Knowledge sharing behaviour implies a reciprocal process where knowledge is donated (or given) and collected (or received) (Van den Hooff & De Ridder, 2004, p. 118). Knowledge sharing behaviour is the dependent variable in this study, as it has been in several studies based on the Theory of Reasoned Action, devised to explain the relationship between knowledge sharing attitude, intention and behaviour (Bock, Zmud, Kim, & Lee, 2005, p. 92; Cabrera & Cabrera, 2005, p. 613; Peslak & Sendall, 2012, p. 14; Tohidinia & Mosakhani, 2010, p. 623). These studies provide evidence of the basic tenet that knowledge attitude indicates the degree of positivity a person has about knowledge sharing and that this is a precursor to the intention to share knowledge, which similarly prompts knowledge sharing behaviour. The theory suggests that knowledge sharing behavior, through knowledge sharing intention, is affected by knowledge sharing attitude and shared norms, (Reinholt, Pedersen, & Foss, 2011, p. 18; Van den Hooff, Elving, & Meeuwsen, 2003, p. 126). Although useful for understanding knowledge sharing behavior, this theory does not investigate enablers of knowledge sharing behavior, especially between organisations such as SMMEs.

2.2.4. Inter-Organisational Knowledge Sharing

A commonly cited author is Easterby-Smith (2008), who developed a framework for inter-organisational knowledge transfer involving the donor and recipient firms and the

factors influencing the transfer of knowledge between them. Mariotti (2005, p. 5) suggests that organisations overlap in their knowledge, placing importance on the relationships between organisations that transcend traditional boundaries. This concept of boundaries was extended by Paraponaris and Sigal (2015, p. 9), who noted that boundaries are not static, as knowledge communities arise in and between organisations. Further, the blurring of organisational boundaries can lead to unequal sharing of knowledge (Abualqumboz, Reid, Papalexi, & Bamford, 2017, p. 7). Many researchers have emphasised the benefits of inter-organisational knowledge sharing (Carlsson, 2003, p. 196), and, as evidenced in a meta-analysis of empirical studies by van Wijk et al. (2008, p. 836), improvement in organisational innovation and performance occurs with successful inter-organisational knowledge sharing. This meta-analysis further suggested that important prerequisites to inter-organisational knowledge sharing are network characteristics, specifically social relationships, network structure and cognitive dimensions such as shared goals (Carlsson, 2003, p. 196; van Wijk et al., 2008, p. 196). Of further interest to this study, there has been recent research interest in virtual communities that consider knowledge shared across electronic networks (Chen, Chen, & Kinshuk, 2009, p. 134). However most inter-organisational knowledge sharing studies have concerned business partners such as joint ventures, who have a strategic need to share knowledge (Inkpen & Tsang, 2005, p. 148; Paraponaris & Sigal, 2015, p. 2). However, there is a gap in the research concerning loose networks of organisations, particularly small organisations and more specifically female SMME networks.

2.3. Networks in Business

Much of the research into networks has been on strategic alliances or industry associations (Paraponaris & Sigal, 2015, p. 2). Given the difficulty in sharing knowledge especially inter-organisationally, Lefebvre et al. (2016, p. 570) suggest that knowledge transfer networks are of particular importance. In a literature analysis of knowledge management in different types of SME networks, Valkokari and Helander (2007, p. 598) noted that research tying together strategic networks and knowledge management was lacking, particularly from an SME perspective. The different types of networks discussed in literature are covered next, followed by a review of communities of practice. This is followed by networking in small businesses and the differences between male and female networks. This section concludes with a review of literature around female SMME networks.

2.3.1. Business Network Types

Network types range from close vertical networks, which are limited networks consisting of the organisation and its immediate partners in the supply chain, to loose horizonal value-added networks (Möller, Rajala, & Svahn, 2005, p. 1277; Valkokari & Helander, 2007, p. 602). In a review of research into networks and entrepreneurship, Slotte-Kock and Coviello (2010, p. 46) acknowledge the increasing complexity of networks and distinguish between social, entrepreneurial and business networks, where the latter places emphasis on the network itself. This implies that participants are equally involved and responsible, while the network itself is adaptive and dynamic, with relationship development and reciprocity being key. The inter-organisational focus of business networks is more relevant to this study, however, as the authors suggest, all three types of networks are useful when considering entrepreneurial networking (Slotte-Kock & Coviello, 2010, p. 48). Inkpen and Tsang (2005, p. 152) identified three network types in their research into how social capital characteristics differ across networks. The types identified were alliances (immediate vertical networks), internal company networks (intra-organisational networks) and industrial districts (immediate horizontal networks) (Inkpen & Tsang, 2005, p. 156). None of these network types strictly match that of the female SMME network. Carlsson (2003, p. 198) conceptualised three different types of inter-organisational knowledge networks: The first is a network created and governed by the firm, similar to an extranet; the second is also created by the firm, but is open to anyone; and the last is a totally open network, not controlled or governed by any one firm. This last type would fit closest with female SMME networks in this study.

2.3.2. Communities of Practice

The concept of communities of practice was devised by Lave and Wenger (2010, p. 1) as a social system conducive to peer-to-peer learning. Instead of formal inter-organisational ties as many networks contain, communities are effective in sharing tacit knowledge (Roberts, 2006, p. 624; Van den Hooff et al., 2003, p. 119). Communities of practice can exist intra-organisationally, but their value for knowledge sharing lies in inter-organisational communities (Roberts, 2006, p. 634). A female-based SMME network could be conceived as a form of community of practice where there is mutual engagement, joint objectives and sharing of common practices, and these are enabled by information technology such as social media (Mc Manus et al., 2016, p. 591; Paraponaris & Sigal, 2015, p. 9). However, communities of practice are

typically small groups of tightly related members (Roberts, 2006, p. 631; Wasko & Faraj, 2005, p. 37). More suitable to this study are networks of practice, devised by Wasko and Faraj (2005, p. 37), which are larger, less close-knit, more dispersed and often professionally co-ordinated and computer-mediated. Communities of practice and networks both encourage connectivity, while communities of practice place more emphasis on identity, and through their social network, are a source of knowledge sharing (Usoro, Sharratt, Tsui, & Shekhar, p. 2; Wenger, 2010, p. 7). This gives weight to researching social identity and social networks as knowledge sharing enablers in a female SMME network. There have been a number of critiques of communities of practice, with even the term being considered too narrow with implied associations of social structures (Roberts, 2006, p. 632). Communities of practice are also more fluid and less formal than networks, and are difficult to formally establish, unlike a female SMME network (Roberts, 2006, p. 625). Although there are aspects of the features of communities of practice evident in female SMME networks, the term is considered too narrow for this research.

2.3.3. Networking Among Small Businesses

Networking in small businesses has numerous definitions in the literature. In the broader concept, it relates to interpersonal relationships that entrepreneurs pursue with the objective of furthering their small business (Coulthard & Loos, 2007, p. 5). Inter-organisational networks are particularly important to entrepreneurial firms facilitating their growth and sometimes survival (Lechner & Dowling, 2003, p. 2). Business networking styles can differ among countries, as different cultures value different entrepreneurial traits (Lechner & Dowling, 2003, p. 21). This implies that research on South African networks could result in different conclusions to research undertaken in other countries. Coulthard and Loos (2007, p. 7) describe networking as being constructed of the concepts of trust, communication and environmental scanning. They suggest that having trust and effective communication with external stakeholders while making use of environmental scanning, allows small businesses to exploit opportunities (Coulthard & Loos, 2007, p. 7). Other literature gives more specific detail as to what makes up an entrepreneur's network: partners, customers, suppliers, financial partners and even family members (Lechner & Dowling, 2003, p. 6). In a review of research on small business alliances and networks, Street and Cameron (2007, p. 251) determined that the size and density of small business networks affect their performance, especially when common goals are evident. The research they reviewed showed quantitative performance improvements evidenced by improved

sales and lower cost, and qualitative improvements such as increased innovation and meeting business goals (Street & Cameron, 2007, p. 252). In case-based research, Lechner and Dowling (2003, p. 14) described a number of types of networks relevant to small start-up firms, one of which is knowledge-based. Their research is particularly relevant as it concerned inter-firm networks, which, they maintain, is important for entrepreneurial business growth (Lechner & Dowling, 2003, p. 2). Trust and socialisation support knowledge-based networks, which they distinguished differently from social or reputation-based networks (Lechner & Dowling, 2003, p. 14). Having established the advantages of networking to small business, the potential for discrepancies in the benefits based on gender must be explored.

2.3.4. Male Versus Female Business Networks

Upton et al. (2014, p. 2) hypothesised that there are structural differences between male and female social networks. They conducted empirical research to explore these gender differences during the start-up phase of businesses, using data collected from a large sample of two cohorts of entrepreneurs in the United States (Upton et al., 2014, p. 12). Their findings show that the quality of network connections is more important than the quantity of connections for both genders, and that female entrepreneurs, in particular, should leverage these connections to improve social capital (Upton et al., 2014, p. 34). They conclude that understanding the differences between male and female networks and the importance of entrepreneurial female networks is key to improving overall economic growth (Upton et al., 2014, p. 37). This was substantiated in a critical survey into gender and entrepreneurial networks, where the authors contend that there are gender-based differences in both the composition of networks and the way they operate, and that further research is necessary (Hanson & Blake, 2009, p. 146). In research into gender-based characteristics of networks, Ridgeway and Smith-Lovin (1999, p. 196), found that female networks are more densely connected and that all-female networks have less constraints, as gender-identity is closely related to social identity. Working females have been shown to have less social capital than men due to less effective networking (Durbin, 2011, p. 109; Kumra & Vinnicombe, 2010, p. 524; Oke, 2013, p. 2; Ridgeway & Smith-Lovin, 1999, p. 197) even though they tend to be more open to knowledge sharing than men (Connelly & Kelloway, p. 299). Thus, in terms of this study, female support networks and identifying enablers of knowledge sharing in terms of social capital is particularly relevant. Prior to this, literature establishing the importance of female-led SMMEs must be reviewed.

2.3.5. Importance of Female SMMEs

Female SMME networks have been selected for this study as they have been shown to be important drivers of economic growth, particularly in emerging economies (Deborah et al., 2015, p. 37; Ekpe et al., 2015, p. 360). For this reason, a number of female SMME networks have been established by governmental organisations, in an effort to alleviate unemployment (SEDA, p. 12). This South African government intervention suggests a strategic imperative to support female SMMEs, indicating government recognition of problems faced by South African female entrepreneurs and the fact that South African female entrepreneurship lags behind the global average (Herrington et al., 2016, p. 31; Viljoen, 2001, p. 38). The necessity of such intervention is stressed by Herrington et al. (2016, p. 38) who surmise that without such policies the economic and societal benefits of SMMEs will be not be felt. Policies have been put in place by the South African government to favour underprivileged groups such as female entrepreneurs (Deborah et al., 2015, p. 40). Initiatives by the Department of Trade and Industry have sought to empower female entrepreneurs by supporting skills development and training, providing access to funding, networking opportunities and access to technology (DTI, 2011, p. 16; Mandipaka, 2014, p. 128) Herrington et al. (2016, p. 34) identified that the main challenge for female entrepreneurs is that they have less business-orientated networks for support. Their research shows there is a downward trend in female entrepreneurial activity in South Africa, while acknowledging that such gender gaps have a negative consequence for the country's economic development (Herrington et al., 2016, p. 35). Research by Young and Scherrer (2010, p. 12) shows that gender-based policies are often built on superficial understanding of gender issues, resulting in a mismatch between gender-sensitive policy rhetoric and implementation. Quantitative research by Deborah et al. (2015, p. 47) concluded that there is a need for successful South African female entrepreneurs to assist and mentor other female entrepreneurs, supporting the need to encourage female SMME networks. Their study showed that interaction between female entrepreneurs helps them to develop, with successful female entrepreneurs demonstrating good business relationships through networks (Deborah et al., 2015, p. 41). Similarly, Hanson and Blake (2009, p. 144) proposed that successful female entrepreneurs in a network have a snowball effect in encouraging more female entrepreneurship. Having established the importance of female SMME networks, literature on how knowledge is sharing in these networks will now be discussed.

2.4. Knowledge Sharing in Female SMME networks

Although historically the domain of big business, knowledge management (KM) is critical to small business, given the growing knowledge-based economy (Carlsson, 2003, p. 194; Chan & Chee-Kwong, 2008, p. 87; Hussain et al., 2010, p. 8971). Small businesses are often less formal, with personal supervision and decision-making undertaken by the entrepreneur, while being constrained by limited resources (Edvardsson & Durst, 2013, p. 352). Female entrepreneurs tend to dominate the micro and informal spectrum of South Africa SMMEs (DTI, 2011, p. 45; Kock, 2008, p. 37). The following sections review literature around knowledge sharing in SMMEs, inter-organisational knowledge sharing and finally knowledge sharing specially in female SMME networks,

2.4.1. Knowledge Management in SMMEs

In a review of the literature on knowledge management in small businesses, Edvardsson and Durst (2013, p. 352) contend that small businesses face unique knowledge management challenges and that they find knowledge sharing in particular a time consuming process. However their review concluded that small businesses can benefit from knowledge sharing through various measures of improved business success (Edvardsson & Durst, 2013, p. 354). A recent study also considering the benefits of knowledge management to entrepreneurs was conducted by Bienkowska-Golasa (2016, p. 27), who found that improved product quality, increased customers and improved partner collaboration were among the highest rated benefits. Of relevance to this research, Bienkowska-Golasa (2016, p. 25), identified the synergy arising from inter-organisational links that allow information and idea sharing.

2.4.2. Inter-Organisational Knowledge Sharing in SMMEs

Evangelista, Esposito, Lauro, & Raffa (2010, p. 36) acknowledge that many of the KM attempts by small business have concentrated on internal KM practices, and that these concentrate on the technology supported KM aspects. They suggest that there is a need for inter-firm knowledge sharing and collaboration (Evangelista et al., 2010, p. 39). Successful knowledge sharing has been acknowledged as a difficult process, particularly between organisations (Lefebvre et al., 2016, p. 570), implying that efforts to determine enabling factors for the process, such as this study is concerned with, would be beneficial. Further, Lefebvre et al. (2016, p. 577) contend that there is a lack

of research in determining these enablers, especially research at the network level, such as female SMME networks. Following a two-tiered approached to determine the impact of knowledge management on SMME success, Chen, Duan, Edwards, and Lehaney (2006, p. 8) concluded that external knowledge is particularly important, specifically knowledge about customers, competitors, suppliers and emerging market trends and concluded that SMMEs need to participate in networking activities in order to be successful. Further, their survey and follow-up interviews revealed that while over 92% of the SMMEs had been involved in inter-organisational knowledge transfer, only 56% felt they were making the most of shared external knowledge. Of particular relevance to this research, over 80% of their respondents believed that social and electronic networks are important mechanisms for gaining knowledge (Chen et al., 2006, p. 18). The authors note that although valid and empirically sound, a limitation of their study is that it was conducted in the service sector in the UK so results may not hold true in other sectors or places, which would include South Africa (Chen et al., 2006, p. 21).

2.4.3. Female SMME Networks and Knowledge Sharing

In a longitudinal study undertaken in Bangladesh, Maas, Seferiadis, Bunders, and Zweekhorst (2014, p. 160) infer that female entrepreneurs use their shared meanings and norms to develop their social capital. Their study showed that in developing countries, female entrepreneurs can use networks to improve the flow of information and gain access to knowledge and pool resources. They propose that open networks, where female entrepreneurs are free to join or leave the network as they wish, grow over time, with a strengthening of bonds. This research, the authors acknowledge, is limited to subsistence type entrepreneurship in developing markets (Maas et al., 2014, p. 467). In a mixed methods study undertaken on female entrepreneurs and social networks in Nigeria, Oke (2013, p. 8) found that inter-personal relationships that female entrepreneurs develop through their social networks have a positive correlation with the success of their small business. A recommendation of Oke's study was that further research is needed into the determinants of effective social networking female entrepreneurs (Oke, 2013, p. 8), which the knowledge sharing enabling factors of this study seeks to do. Very little research has been conducted into gender-specific knowledge sharing, especially in female SMME networks. A study by Ekpe et al. (2015, p. 364) concluded that government support of female networks, via social, professional or business associations, is necessary to ensure their success and in turn the economic success of the country.

There has been very little research published about South Africa female entrepreneurial networks, however in a dissertation by Kock (2008, p. 51), female entrepreneurs in South Africa were found to emphasise social values and measure success in terms of inter-personal relationships. The research identified the importance of networking to the success of female-led enterprises by improving information exchange, training and support (Kock, 2008, p. 111).

The theoretical foundation to the research is now discussed.

2.5. Theoretical Foundations

In this study, a distinction is made between tacit and explicit knowledge that female entrepreneurs share, therefore the development of the conceptual framework begins with Nonanka's model describing these types of knowledge and the conversion between them. It then shows how this model has been used to derive knowledge enablers. Social capital theory is then introduced to further narrow down the knowledge enablers. Finally, the specific conceptual model for this study is presented, showing the potential relationships between the selected knowledge enablers and knowledge sharing behavior.

2.5.1. Nonaka's Tacit and Explicit Knowledge Theory and the Concept of Ba

This well-known theory is based in the premise of there being two types of knowledge – tacit and explicit, where tacit knowledge is more cognitive and difficult to codify than explicit knowledge, which can be more easily captured and transmitted (Nonaka & von Krogh, 2009, p. 636). The Spiral of Knowledge Creation was devised by Nonanka in 1994 as a way to represent the interaction and conversion of tacit and explicit knowledge through social interaction (Nonaka & von Krogh, 2009, p. 635). The process is best explained diagrammatically:

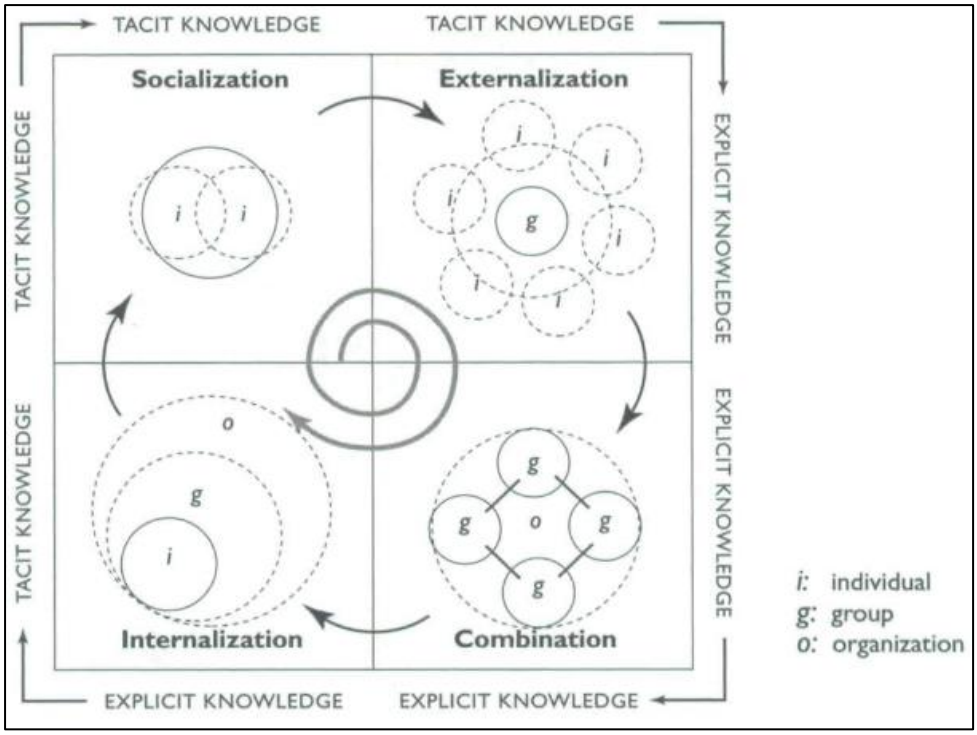

Figure 2-1 Spiral evolution of knowledge creation (Nonaka & Konno, 1998, p. 43).

In the Socialisation space, tacit knowledge is shared, often through physical proximity (Nonaka & Konno, 1998, p. 43). Shared experiences in network situations lead to cooperation and interaction (Chou & He, 2004, p. 147). During Externalisation, tacit knowledge is transferred into explicit knowledge and captured for sharing in a group. In Combination, explicit knowledge is combined and systemised; knowledge is transferred and shared among groups. Finally, in this dynamic process, knowledge is internalised, with a conversion from explicit to tacit knowledge by individuals in the larger context of the organisation (Nonaka & Konno, 1998, p. 45). Nonaka's original research on the dynamic nature of organisational knowledge creation postulated that ontologically, knowledge is created and shared by individuals and therefore social interaction is required as a prerequisite for knowledge creation (Nonaka, 1994, p. 15). In a new model that combines Nonaka's model and social media, Afzal, Shah, Kahn, and Amjad (2013, p. 776) propose that social media should be at the heart of knowledge sharing strategies, since social media is ultimately technology that facilitates communication and collaboration. They see this becoming more prevalent in future and suggest that communities of knowledge would emerge from the collective intelligence (Afzal et al., 2013, p. 775).

Nonaka also came up with the concept of Ba - a shared context or space where people interact, thereby sharing and creating knowledge (Nonaka & Konno, 1998, p. 41; Nonaka, Toyama, & Konno, 2000, p. 14). Each of the types of Ba relate to one of the four processes described above and depicted in Figure 1. The Originating Ba allows Socialisation, in which individuals share tacit knowledge in a social context. The Dialoguing Ba allows individuals to convert tacit into explicit knowledge by developing and sharing common language through Externalisation. The Systemising Ba is also referred to as Cyber Ba as interactions are virtual and collective. This Ba is used to capture shared knowledge in collaborative environments such as social media networks, thereby facilitating the Combination process. Finally, the Exercising Ba provides a space for Internalisation, where tacit knowledge is shared (Nonaka & Konno, 1998, p. 46). Some researchers question the applicability of Nonaka's model, particularly with reference to Socialisation, to other non-Japanese countries (Hong, 2011, p. 200), however female-based networks have generally been found to be more supportive of socialisation (Oke, 2013, p. 5) implying more relevance of Nonakas' model to this study.

Nonaka's theory and conceptualisation of Ba is however, not sufficient in attempting to explain knowledge sharing in female networks. The first problem is that the theory was derived to explain knowledge creation, not knowledge sharing. Secondly, this research is concerned with knowledge sharing across organisational boundaries only, whereas Nonaka's theory is geared toward intra-company, individual and group sharing. However each Ba is still relevant as a way of exploring knowledge sharing enabling factors.

2.5.2. Enabling Conditions for Knowledge Sharing

The benefits of knowledge sharing have been well researched, as established above, however the factors that enable knowledge sharing are less well known (Tohidinia & Mosakhani, 2010, p. 612). Nooshinfard and Nemati-Anaraki (2014, p. 240) acknowledge that there is a lack of research into inter-organisational knowledge sharing success factors. Mc Manus et al. (2016, p. 592) in their review of the literature on factors influencing knowledge sharing behaviour, acknowledge that categorisation and selection of enabling factors is a limitation. For this study, selection of these knowledge enabling factors was carefully derived from literature and well-known theory, and is discussed next.

Wei Choo and Correa Drummond de Alvarenga Neto (2010, p. 593) considered 135 papers on knowledge creating conditions and context, related to Nonaka's concept of Ba, that had been published after Nonaka's original paper. They undertook a comprehensive content analysis and concept modelling, resulting in four sets of enablers that allow knowledge processes to gain traction, at four levels of interaction (Wei Choo & Correa Drummond de Alvarenga Neto, 2010, p. 605). These are represented in the following framework:

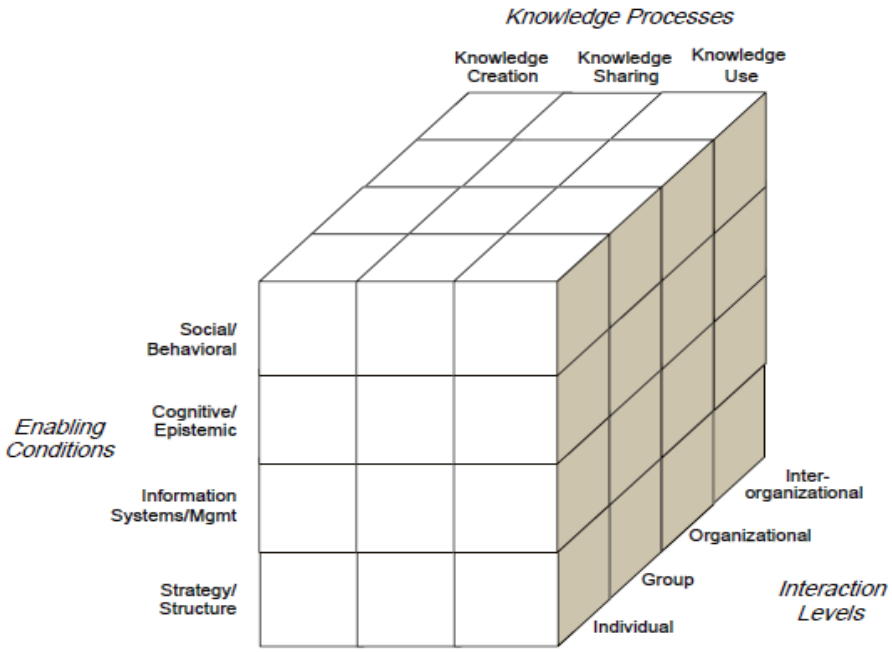

Figure 2-2 Framework for enabling conditions Wei Choo and Correa Drummond de Alvarenga Neto (2010, p. 605)

This framework includes a large number of potential knowledge sharing enablers. These can be narrowed down for the purpose of this study to only include enabling factors for inter-organisational knowledge sharing. A number of important studies have used the factors derived from social capital theory, which overlap with the factors above. The Social/Behavioral category includes factors related to relationships and interactions prevalent in informal business networks (Wei Choo & Correa Drummond de Alvarenga Neto, 2010, p. 600). Trust and social identity have been identified as enabling conditions that arise specifically in inter-organisational knowledge sharing (McLeod, 2010, p. 391; Wei Choo & Correa Drummond de Alvarenga Neto, 2010, p. 604). The Cognitive/Epistemic group relates to conditions required for shared spaces and goals being considered as an important enabling factor in networks, especially considering the concept of Ba, which revolves around the concept of sharing in terms

of context, relationships and spaces (Nonaka & Konno, 1998, p. 40; Wei Choo & Correa Drummond de Alvarenga Neto, 2010, p. 604). The Information Systems group relates to information and communication technologies that enable knowledge sharing (Wei Choo & Correa Drummond de Alvarenga Neto, 2010, p. 602). Here, social networking has been identified as a key social technology for communication, collaboration and knowledge sharing (Wahlroos, 2010, p. 14; Wei Choo & Correa Drummond de Alvarenga Neto, 2010, p. 602). Finally, the Strategy/Structure group deals with support for knowledge sharing, in terms of providing the structure and functioning of the Ba. Inter-organisational knowledge sharing such as this research is concerned with would fall in this group (Lechner & Dowling, 2003, p. 3; Wei Choo & Correa Drummond de Alvarenga Neto, 2010, p. 603). Through their extensive review of Ba-inspired research, Wei Choo and Correa Drummond de Alvarenga Neto (2010, p. 606) recommended that further empirical research is undertaken in the social and cognitive aspects, as there is currently a lack of research on knowledge sharing behaviour from these perspectives. There is a close relationship between the afore-mentioned enablers and those implicit in social capital theory, which is reviewed next.

2.5.3. Social Capital Theory

As Lefebvre et al. (2016, p. 570) contend, social capital theory is a logical choice in researching knowledge sharing in networks, due to the integral role social relationships play in both knowledge sharing behaviour and in networks. Lefebvre et al. (2016, p. 577) also support the need for more research into the antecedents of social capital which this study seeks to address. Kumra and Vinnicombe (2010, p. 528) undertook a qualitative study concluding that social capital is important to female career advancement, while Connelly and Kelloway (2003, p. 298), in their quantitative study, found that females associate social interaction with a positive knowledge sharing environment.

The Dimensions of Social Capital

The concept of social capital has been explained in a number of ways, however this study uses the description provided by (Nahapiet & Ghoshal, 1998, p. 243) in one of the most cited studies of this concept. They suggest that social capital derives from networks of relationships that allow network members to share and mobilise knowledge (Nahapiet & Ghoshal, 1998, p. 243). These authors presented an integrated framework for explaining the link between social capital and knowledge sharing that explains why voluntary members of loose networks of practice such as a

female SMME network would share knowledge. These authors were the first to divide the concept of social capital into three dimensions: relational, cognitive and structural, and most subsequent studies on social capital and knowledge sharing are based on these (Darvish & Nikbakhsh, 2010, p. 31). These dimensions will also be used in this study as a framework for the enabling factors for knowledge sharing in female SMME networks. Relational social capital develops from personal relationships and includes trust and social identity as key facets (Nahapiet & Ghoshal, 1998, p. 244). Both of these factors are considered as knowledge sharing enabling factors for this study, thus relational social capital is conceptualised as a two-dimensional construct. The relational dimension is equivalent to the social/behavioral group of factors identified above by Wei Choo and Correa Drummond de Alvarenga Neto (2010, p. 600). The cognitive dimension provides systems of meaning among members of networks, as per the cognitive/epistemic group devised by Wei Choo and Correa Drummond de Alvarenga Neto (2010, p. 601). Cognitive social capital is conceptualised in terms of the shared goals dimension for this study (Nahapiet & Ghoshal, 1998, p. 244). The final facet is structural social capital which refers to the connections between members in the form of social or network ties, as would be evidenced in an online social media network (Nahapiet & Ghoshal, 1998, p. 244; Wahlroos, 2010, p. 14; Wei Choo & Correa Drummond de Alvarenga Neto, 2010, p. 602). Thus, there are four factors from the dimensions of social capital used in thus study: Trust and social identity in the relational dimension; social media networks in the structural dimension, and shared goals in the cognitive dimension. Before considering each of these variables independently, a discussion of previous research into social capital and knowledge sharing in networks is necessary.

Social Capital, Knowledge Sharing and Networks

Social capital manifests as a benefit of belonging to a network, while the configuration of the network provides the support for knowledge sharing, (Paraponaris & Sigal, 2015, p. 3). Social capital as a resource has been the subject of a number of studies, with one of the first by Tsai and Ghoshal (1998, p. 464), who conducted well-cited empirical research supporting the link between social capital and the creation of value in a firm. This intra-firm research was extended in a seminal paper by Inkpen and Tsang (2005), which was the first to link the constructs of knowledge transfer, social capital and networks. The paper is so well cited in research on networks that it won a decade award for 10 years of still making a contribution to the subject area (Inkpen & Tsang, 2016, p. 573). Inkpen & Tsang (2005, p. 151) researched how networks affect knowledge transfer concentrating on the social capital dimensions. They considered

the more formal network types but stressed how the dimensions of social capital influence knowledge sharing in the different network types. In reflecting on the decade award they received for this study, they identified firstly, the growth in the importance of research on social capital; secondly, that with the increase in technology and social networks, research on social capital in social networks is required, and lastly that the practical importance of knowledge transfer in creating competitive advantage for firms has been evidenced (Inkpen & Tsang, 2016, p. 576).

Chow and Chan (2008, p. 460) considered similar factors from social capital however they only looked at internal organisational knowledge sharing. Specifically, their study was one of the first to provide empirical evidence of the link between knowledge sharing intention and social trust (from the relational dimension), social networks (from the structural dimension) and shared goals (from the cognitive dimension). More recent research by Bautista and Bayang (2015, p. 666) validated the link between these same factors and knowledge sharing but was conducted on a small scale sample in a single organisation. Hau, Kim, Lee, and Kim (2013, p. 358) also considered knowledge sharing intentions and the independent variables of trust and shared goals, but used social ties rather than social networks in the structural dimension. They made the distinction between tacit and explicit knowledge sharing intentions, finding that although both forms of knowledge improve knowledge sharing intentions, tacit knowledge sharing is improved most by the three social capital factors. Similarly, a well-known study by Tsai and Ghoshal (1998, p. 466) found a link between the social ties (structural dimensions), trust (relational dimension) and shared vision (cognitive dimension) and intra-firm knowledge exchange, which then increased firm innovation. In comparing these studies, the research by Inkpen and Tsang (2005) looked at various generic network types while that by Chow and Chan (2008) and Hau et al. (2013) centered on intra-firm knowledge sharing. Inkpen and Tsang (2016, p. 585) identified future research opportunities as involving more specific network types, especially in newer virtual networks that did not exist at the time of their original research. Likewise, Tsai and Ghoshal (1998, p. 474) recommended research into inter-organisational knowledge sharing. The female SMME networks using online social networks would fill this gap. Analysis of research based on Inkpen and Tsang's social capital framework suggests the continued importance of the interlinked constructs and that this research is still in its infancy (Inkpen & Tsang, 2016, p. 585). In summary, social capital theory enables a narrowing down of the possible knowledge enabling factors identified in the review of research related to Nonaka's concept of Ba, by Wei Choo and Correa Drummond de Alvarenga Neto (2010, p. 604). The four knowledge

enabling factors relating to inter-organisational networks, the dependent variables in this study, will now be discussed.

2.6. Development of the Conceptual Framework

The conceptual framework provides focus for the study by drawing on the theory of social capital and relating it to the knowledge sharing enablers under study.

2.6.1. Knowledge Sharing Enablers

There are four knowledge sharing enabling variables in this model – trust, social identity, social media usage and shared goals. Derived from social capital theory, each of these enablers falls under one of the dimensions of social capital theory. Each enabler is an independent variable for the study and will be expanded on below.

Trust – Knowledge Sharing Enabler in the Social Dimension of Social Capital

Trust has been defined in many ways in the literature ranging from the willingness of a person to be vulnerable, to shared norms, to perception of source reliability and credibility (Abrams, Cross, Lesser, & Levin, 2003, p. 65; Usoro et al., p. 5). Trust in relation to knowledge sharing is commonly divided into benevolence-based trust, which stems from belief in the integrity of others, and competency-based trust, stemming from the belief in the ability of others (Levin & Cross, 2004, p. 6; Paroutis & Saleh, p. 60; Usoro et al., 2007, p. 5). Similarly, Smith and Lohrke (2008, p. 317) distinguish between two types of trust – cognitive, which is rational, knowledge and evidenced based, and affective trust, which is emotional and based on social relations. Thus, affective trust can be likened to benevolence-based trust and cognitive trust to competency-based trust. Although trust is a multi-faceted concept, in terms of trust between members of a network, it is conceptualised in this study as the expectation of cooperation and honesty between members allowing mutual confidence in each other and based on benevolence and competence (Levin & Cross, 2004, p. 6). The issue of trust in knowledge sharing has been raised by several researchers (Chen et al., 2006, p. 8; Nieminen, 2005, p. 108; Rhodes, Hung, Ya, & Wu, 2008, p. 87). Interpersonal trust promotes sharing in networks, especially informal networks, by increasing the overall amount of knowledge transferred and reducing the costs of sharing (Abrams et al., 2003, p. 65). This is significant to this study as it suggests collaborative engagement through communication in networks, such as a SMME business network,

could be enhanced with increased trust between parties to the knowledge sharing process. Rhodes et al. (2008, p. 87) acknowledged the necessity of understanding competency-based trust in knowledge sharing as a relational factor in social capital. Their survey-based research evidenced a positive correlation between a trust culture and knowledge transfer, however their study was on intra-organisational knowledge sharing only. A recent review of the research on inter-organisational knowledge transfer demonstrated the necessity for trust in sharing knowledge in networks (Battistella, De Toni, & Pillon, 2016, p. 1023). In considering inter-organisational knowledge sharing, Nieminen (2005, p. 111) interpreted mutual trust as supporting shared social identity in networks through improved communication and transparency - worth noting as social identity is the second relational factor in social capital theory, and is a variable in this study. Trust can also be related back to tacit-to-tacit knowledge sharing that occurs through Socialisation in the Originating Ba (Nonaka & Konno, 1998, p. 46). Trust has been identified as one of the important elements of the relational dimension in social capital theory (Inkpen & Tsang, 2005, p. 151). The relationship between an entrepreneurial social capital and networking is described by Smith and Lohrke (2008, p. 317) who identified the network itself as a source of social capital, with trust being a key element in the network's success. In order for female members of an SMME network to share tacit knowledge, either in a face--to-fact social setting or over a virtual social network, it is proposed in this study that trust is an enabling factor for knowledge sharing behavior.

This leads to the first hypothesis for this study:

H_1: Trust has a positive effect on knowledge sharing behaviour among members of female SMME networks.

Social Identity - Knowledge Sharing Enabler in the Social Dimension of Social Capital

Shared social identity has been conceived of as a pre-requisite to inter-organisation sharing of knowledge (Nieminen, 2005, p. 110). Nonaka's Externalisation process, in the Interacting Ba, is supported by social identity, where the members of the network feel a sense of connection and identity with other members, increasing their confidence in contributing to the knowledge repositories of the network (Nonaka & Konno, 1998). Cheng and Guo (2015, p. 230) identified two research trends around the social identity construct: The first is where people identify with a group by self-categorising, for example by gender; the second is where social identity is based on a sense of belonging to a group, for example to a social network (Durbin, 2011, p. 94). This latter

trend is adopted by this study on female SMME networks as, even though gender is a form of self-categorising, a sense of belonging implies a more enduring emotional and task commitment. It also involves interaction between members of the group who share goals – another of the variables in this study. Therefore for this study, the construct of social identity refers to the shared meaning that group members derive from belonging to a network (Mariotti, 2005, p. 14). Having a shared social identity lowers the cost of communication while increasing co-operation and opportunity for knowledge sharing (Nahapiet & Ghoshal, 1998, p. 256; Nieminen, 2005, p. 110). The idea of shared identity in networks has been termed network identity or networkness, which develops over time, while providing the rules for knowledge sharing (Mariotti, 2005, p. 14). Mariotti's case-based study, however, looked at close organisational networks of partners and suppliers, unlike this study of female SMME networks. Easterby-Smith and Tsang (2008, p. 680) posit that informal social ties are preferable for successful knowledge transfer in networks. In research into gender-based characteristics of networks, Ridgeway and Smith-Lovin (1999, p. 210) found that female networks are more densely connected and that all-female networks have fewer constraints as gender identity is closely related to social identity. Although researching learning rather than knowledge sharing, Nieminen (2005, p. 113) discussed how a shared identity is important for sharing of tacit knowledge, where trust and openness improve communication. Shared understanding is required of the relationship between sender and receiver firms in knowledge transfer while, of relevance to this study, a shared professional identity increases trust and knowledge sharing between organisations (Nieminen, 2005, p. 113).

In a study of virtual communities, Chiu et al. (2006, p. 1883) applied social capital theory to knowledge sharing and evidenced a positive relationship between social identity and quantity of knowledge sharing. Similarly, Chen et al. (2009, p. 139) demonstrated a relationship between social identify and knowledge contribution in virtual networks. Links between this relational dimension of social capital and knowledge sharing behaviour have been established through knowledge sharing attitude and intention, however there is little research into the specific nature of the ties between female entrepreneurs who are members of an SMME network. Despite their in-depth analysis of social identity, Nieminen (2005, p. 115) acknowledged the need for more empirical research on the concept especially in relation to inter-organisational networks. Thus, in this research the relationship between social identity and knowledge sharing behavior will be tested.

This leads to the second hypothesis for this study:

H_2: Shared identity has a positive effect on knowledge sharing behaviour of female members of SMME networks

Social Media Usage – Knowledge Sharing Enabler in the Structural Dimension of Social Capital

Rhodes et al. (2008, p. 87) postulate that information technology (IT) is the backbone that accelerates the transfer of knowledge by allowing quick information retrieval and support for communication and collaboration. Social media networks are one such form of communication and collaboration information technology. In a new model combining Nonaka's model and social media, Afzal et al. (2013, p. 776) propose that social media should be at the heart of knowledge sharing strategies since social media is ultimately technology that facilitates communication and collaboration. Social media in the context of knowledge sharing is a way for people to easily share knowledge collectively, increasing social capital (Majchrzak, Faraj, Kane, & Azad, 2013, p. 13). With reference to Nonaka's spiral of knowledge creation, formal IT systems have been shown to improve explicit knowledge sharing, while social networks assist with the sharing of tacit knowledge (Rhodes et al., 2008, p. 85). A similar separation is evidenced by work on knowledge management strategy by Jashapara (2011, p. 105) where transfer of codified knowledge occurs in the context of IT and transfer of personalised knowledge occurs with the support of social aspects. Social networking platforms used by professional SMME networks include Facebook, Twitter and LinkedIn. According to Mushonga (2014, p. 44), Facebook is the eighth most visited website by South Africans and is the most widely used social networking platform world-wide. Mashonga's survey-based research investigated how various social media plaforms in South Africa are used for knowledge management. He mapped Nonankas' knowledge activities to features of the various social networking platforms and found that the Combination activity (where explict knowledge is combined) supported online knowledge sharing (Mushonga, 2014, p. 49). Although useful for a South African perspceive, Mushanga's research only concentrated on one of the knowledge sharing enablers and also was not directed towards SMMEs, or female networks. In one of the few studies on virtual networks in South African SMMEs, Muwanga-Zake and Herselman (2017, p. 1) investigated the use of social media in supporting rural communities. They found that IT provided access to knowledge, knowledge sharing and communication by South African SMMEs. Specifically their results evidenced use of Facebook, Twitter and WhatsA pp, with the latter being using mostly for intrafirm knowledge sharing, while Facebook was used for interfirm knowledge sharing

(Muwanga-Zake & Herselman, 2017, p. 8). In another study on virtual networks, Chen et al. (2006, p. 8) explained that explicit and tacit knowledge require a channel to facilitate transfer across organisational boundaries. These channels are most suitably manifested as electronic social networks, relying on information technology and allowing a network to be closer in time and space (Mc Manus et al., 2016, p. 591; Tohidinia & Mosakhani, 2010, p. 612). Most of the SMEs surveyed by Chen et al. (2006, p. 16) acknowledged the effectiveness of their social networks in knowledge sharing although they found a discrepancy between this perception and the SMEs actual social media usage. Social media in relation to social capital was evidenced in a study by Cao et al. (2015, p. 351), who showed that social media usage assists in knowledge integration, contending that social media facilitates the structural dimension of social capital. Specifically, their research provided empirical evidence that social networks increase knowledge integration by improving trust and shared language (Cao et al., 2015, p. 358). Social media facilitates the structural element of social capital by improving network ties resulting from the low cost and geographic spread of social media (Cao et al., 2015, p. 354). Although their study focused on knowledge integration rather than sharing, the research is relevant in this study as their conceptualisation of social capital and its links to knowledge management is similar to that used in this research. However, their study was based in China and did not look at inter-organisation networks, such as female SMME networks. Their research did acknowledge the prior lack of research into social media in the context of knowledge integration and specifically suggested the need for further research into the relational and cognitive aspects of social capital and networks (Cao et al., 2015, p. 358). In a longitudinal study, Chun (2013, p. 25) concluded that women had more depth of content in sharing meaningful knowledge on social media than men, as women prefer to share knowledge with people they already have a relationship with in the boundaries of their network (Chun, 2013, p. 28). Women were also found to integrate their knowledge more and engage in more social aspects online and then integrate this with knowledge gained from their network in face-to-face situations (Chun, 2013, p. 27). This suggests that females gain more from their networks than men, raising the importance of female SMME networks in knowledge sharing. Ekpe et al. (2015, p. 364) measured social networks and female-based enterprise performance in Malaysia and concluded that social networks provide professional advice and access to information necessary for female entrepreneurial success. More research has been called for concerning social media as a platform for knowledge sharing (Lefebvre et al., 2016, p. 577). In research into communities of practice and the influence of IT with respect to sharing of codified knowledge and improved connectivity, Van den Hooff et al. (2003,

p. 135) concluded that having a shared base of information improved knowledge sharing and that improved electronic communication also contributed to knowledge sharing. Their study revolved around explicit knowledge, while acknowledging that such communities also share tacit knowledge in personal, as opposed to online, encounters (Van den Hooff et al., 2003, p. 136) . Wenger (2010, p. 7) suggests that social media supports the peer-to-peer learning that commonly occurs in communities of practice. Females tend to spend more time on social media than men, and contribute more in general (Afzal et al., 2013, p. 776). Social media usage as a knowledge sharing factor is of particular relevance to this research as the female SMME networks have a virtual presence on social media where female entrepreneurs can share their knowledge on their network's virtual social media platforms, combining and enhancing the explicit knowledge. This study will test the relationship between the use of their SMMEs network's social media by the female entrepreneurs, and their knowledge sharing behavior:

The third hypothesis for this study is:

H_3: Social media use has a positive effect on knowledge sharing behaviour of female SMME networks.

Shared Goals – Knowledge Sharing Enabler in the Cognitive Dimension of Social Capital

This factor refers to the common purpose, or vision, that members of a network have - a cohesive force allowing knowledge sharing and facilitating cooperation among members (Chow & Chan, 2008, p. 260; Inkpen & Tsang, 2005, p. 153). The premise is that network members will act in their collective self-interest if they share goals to their mutual benefit (Leana & Pil, 2006, p. 354; Tsai & Ghoshal, 1998, p. 465). A number of studies have shown that shared goals are positively related to an improvement in knowledge sharing attitude (Bautista & Bayang, 2015, p. 663; Chow & Chan, 2008, p. 464). In a study on multinational firms, shared vision was identified as a bonding mechanism necessary for knowledge sharing between head offices and subsidiaries (Li, 2005, p. 93). Results of the descriptive research design employed by Bautista and Bayang (2015, p. 662) demonstrated that shared goals were not dependent on age or education level but were highly correlated with attitude toward knowledge sharing. This research was however conducted within a single organisation, reducing its significance to inter-organisational knowledge sharing such as that applicable to female SMME knowledge sharing. Shared goals and vision have also been shown to improve the quality and quantity of knowledge sharing (Chiu et al.,

2006, p. 1885; Darvish & Nikbakhsh, 2010, p. 44). However, in inter-firm networks, shared goals may be more difficult to achieve due to the complexity of the network (Inkpen & Tsang, 2005, p. 153). A shared vision bonds and integrates members and in doing so promotes understanding and exchange of ideas (Inkpen & Tsang, 2005, p. 153; Li, 2005, p. 82). Several studies have found a relationship between shared goals and knowledge sharing, however, these are mainly intra-organisational (Aslam, Shahzad, Syed, & Ramish, 2013, p. 38; Bautista & Bayang, 2015, p. 662; Chow & Chan, 2008, p. 460; Hau et al., 2013, p. 363; Tsai & Ghoshal, 1998, p. 465). One study that did look at shared goals as part of the cognitive dimension of social capital in an inter-firm network was conducted by Chen, Lin, and Yen (2014, p. 576) who concluded that shared goals improve knowledge sharing through the mediating variable of inter-organisational trust. This is because shared goals improve communication and motivation, increasing trust, and then knowledge sharing. However, although this study was on inter-organisational networks, the research conducted was on supply chains, which are a very different type of network to female SMME networks. Contrary to the finding that trust mediates the relationship between shared goals and knowledge sharing as above, Bakker, Leenders, Gabbay, Kratzer, and Van Engelen (2006, p. 603) reasoned that trust is a condition for knowledge sharing but, as their results showed, knowledge sharing actually occurs because of shared goals, at least in team situations. Of significance to this research, Chiu et al. (2006, p. 1878) researched social capital in the context of knowledge sharing in virtual communities, finding that shared goals assist in the formation of virtual communities in the first place. Their results showed that without a strong shared vision, the quantity of knowledge sharing was negatively impacted (Chiu et al., 2006, p. 1883). Although a female SMME network is not a virtual community, it does share some common characteristics, most importantly the lack of firm-specific shared goals. With little research into this specific context, the fourth hypothesis for study is proposed as:

H_4: Shared goals have a positive effect on knowledge sharing behavior of female SMME networks.

The four hypotheses presented above are shown in the conceptual framework below.

2.6.2. Conceptual model

The conceptual model for this research demonstrates the relationships between the variables that will be tested, in the context of the dimensions of social capital. Although there may be relationships between the independent variables, this study is concerned

with the effect of these four main independent variables on the dependent variable – knowledge sharing:

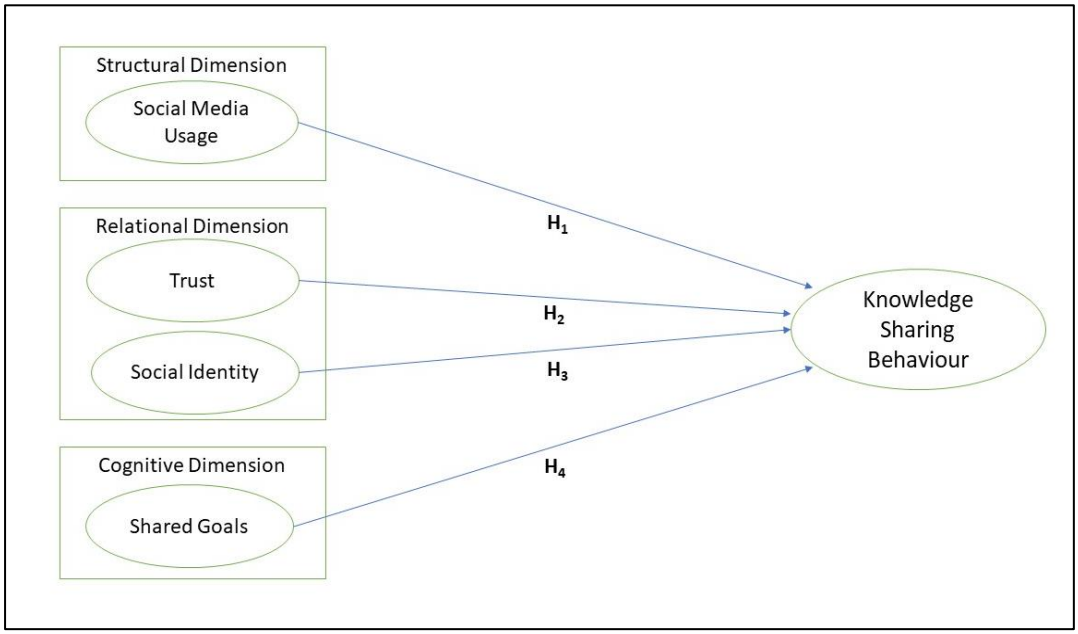

Figure 2-3: Conceptual Model

2.7. Conclusion

The literature review has revealed the complexity of the topic stemming from multiple perspectives of knowledge and knowledge sharing in inter-organisational networks. It has demonstrated a lack of empirical research into the relationship between knowledge sharing enablers and knowledge sharing behaviour (Kanaan & Gharibeh, 2013, p. 238). Specifically, no previous literature was found on the topic in the context of female SMME networks.

Chapter 3. RESEARCH METHODOLOGY

3.1. Introduction

The literature review in the previous chapter introduced the conceptual model for this study and provided insight into previous research into the nature of female entrepreneurs, networks and inter-organisational knowledge sharing. The literature supporting each of the constructs is continued here in the methodology chapter, where it is shown how the research instrument – an online questionnaire – will measure the constructs. First the problem and research objectives/hypotheses are introduced, followed by the research philosophy and design. Justification for the research method is provided. The sample design section explains the target and accessible populations for the study and justifies the sampling method selected. Data collection, preparation and analysis are explained next and data quality shown through reliability and validity. The chapter concludes with ethical considerations.

3.2. Statement of the Problem

Female SMME networks have been created to empower female entrepreneurs in a male-dominated, increasingly knowledge-orientated, business environment (Ekpe et al., 2015, p. 360). Knowledge sharing has been shown to improve business success, but what enables sharing of this knowledge in networks? These knowledge enablers and the extent and nature of knowledge sharing in female SMME networks is currently unknown (Hanson & Blake, 2009, p. 149). This is particularly important in South Africa where the unemployment rate is so high and a more enabling business environment for SMMEs is a priority (Herrington et al., 2016, p. 24; Viljoen, 2001, p. 37).

3.3. Research Objectives/Hypothesis

3.3.1. Research Objectives

The purpose of this research was to better understand knowledge sharing behavior in female SMME networks. Specifically, the research objectives were:

1. To determine the extent and nature of knowledge sharing behaviour in female SMME networks
2. To determine the extent to which trust as a dimension of relational capital

enables knowledge sharing behavior in female SMME networks.

3. To determine the extent to which shared social identity as a dimension of relational capital enables knowledge sharing behaviour in female SMME networks.
4. To determine the extent to which use of the SMME network's social media as a dimension of structural capital enables knowledge sharing behavior in female SMME networks.
5. To determine the extent to which shared goals of SMME network members as a dimension of cognitive capital enables knowledge sharing behaviour in female SMME networks.
6. To determine whether demographic (age and education) and business related (length in business, type of industry, number of employees) factors affect knowledge sharing behaviour.

3.3.2. Hypotheses

As developed from the conceptual framework in Chapter 2, the following hypotheses were tested in this research:

H_1: Trust has a positive effect on knowledge sharing behaviour among members of female SMME networks.

H_2: Shared identity has a positive effect on knowledge sharing behaviour of members of female SMME networks

H_3: Social media use has a positive effect on knowledge sharing behaviour of members of female SMME networks.

H_4: Shared goals have a positive effect on knowledge sharing behavior of members of female SMME networks.

3.4. Research Philosophy

This research followed a positivistic paradigm, in that it sought empirical evidence (du Plooy-Cilliers, 2014, p. 25; Sekaran & Bougie, 2016, p. 28) to determine the extent of knowledge sharing behaviour in female SMME networks. However, since knowledge sharing behaviour is a social construct, post-positivism is technically the correct term for the philosophical approach adopted for this research as this philosophy recognises that there cannot be absolute positive truth when it comes to human behaviour

(Creswell, 2003, p. 7). However, unlike interpretivist or constructivist philosophies, post-positivism still looks for empirical, objective evidence (Creswell, 2003, p. 7). This philosophy is deterministic, seeking numerical observation of causes of outcomes, and reductionist, in that it tests a small number of discrete variables – here the knowledge enablers were reduced to four discrete variables (Creswell, 2003, p. 6) – trust, social identity, social media usage and shared goals. This fits with the belief that knowledge enablers and their effect on knowledge sharing can be viewed objectively and measured independently of human interpretation Ontologically, post-positivism therefore implies that reality can be measured and predicted (du Plooy-Cilliers, 2014, p. 25). This philosophy allows for generalisation of results, thus the metatheoretical position emphasises the universality of the approach (du Plooy-Cilliers, 2014, p. 26). Since the aim was to determine the link between the knowledge enablers and knowledge sharing behaviour, the epistemological position was that valid knowledge can only be gained with empirical evidence (du Plooy-Cilliers, 2014, p. 26). The relationships between the knowledge enabling variables and knowledge sharing behaviour was examined objectively through quantitative research. Axiologically, this paradigm supports objectivity and value-free research methods (du Plooy-Cilliers, 2014, p. 27). The deductive nature of this research also fits the post-positivism philosophy, in that the research started with theory – social capital, and then tested the relational, cognitive and structural elements of the theory. The relationship between the knowledge enabling variables and knowledge sharing behaviour can mostly be examined within this tradition and this was the focus of this research. Further insight into knowledge sharing in female SMME networks through a more subjectively determined qualitative lens such as follow-up interviews, was beyond the scope of this research. This study was therefore in the form of a quantitative questionnaire where the conceptual model was tested.

3.5. Research Design and Methods

3.5.1. Research Design

The research design for this study was predominantly correlational and predictive. Determining the extent to which knowledge sharing enabling factors increase knowledge sharing behavior was the crux of this study. Each of the four enablers from the conceptual model were tested to establish this relationship. The primary aim of correlational research design is to determine whether there is a relationship between the main variables in the study (Davis, 2014, p. 76). Thus, each of the independent

variables – trust, social identity, social media usage and shared goals - were tested to determine their relationships with the independent variable – knowledge sharing behaviour. These bivariate relationships were tested to determine the direction, strength and significance of the relationship. Correlation is either positive or negative (Sekaran & Bougie, 2016, p. 287). The alternate hypotheses for each of the knowledge enablers assumed a positive correlation, where increased presence of knowledge sharing enablers were hypothesised to increase knowledge sharing behavior.

The research design for the first objective – to describe the nature and extent of knowledge sharing behaviour in female SMME networks was descriptive. The aim of descriptive research is to provide information about a phenomenon, in this case knowledge sharing behaviour (du Plooy-Cilliers, 2014, p. 75). To this end the type and nature of knowledge shared in female SMME networks was established by collecting data that describes these characteristics (Sekaran & Bougie, 2016, p. 43).

3.5.2. Research Method

In line with the post-positivistic research philosophy, the research method was quantitative. Objective, empirical evidence of the results can only be gained by employing quantitative data collection and analysis (du Plooy-Cilliers & Cronje, 2014, p. 148). Quantitative methods are empirical and analytical and seek to gain knowledge that is non-subjective, value-free and generalisable (du Plooy-Cilliers, 2014, p. 22). In order to determine the correlation between the knowledge enablers and knowledge sharing behaviour, numerical data was gathered and statistically analysed, which are quantitative techniques. Similarly, to describe knowledge sharing behaviour and the demographic and business-related characteristics of female SMME in networks, quantitative methods were required. The study was not exploratory, as there is literature on inter-organisational knowledge sharing.

The research strategy to best meet the research objectives and questions in the context of the conceptual model was survey research. Specifically, primary data was gathered by means of a cross-sectional survey. The instrument was a close-ended questionnaire.

3.6. Sample Design

3.6.1. Population

The target population includes all elements from whom information can be gathered in order to answer the research questions, where an element is a single member of the targeted population (Pascoe, 2014, p. 132; Sekaran & Bougie, 2016, p. 236). The target population for this study was members of formally organised female SMME networks that have a social media presence. The network needed to have a social media presence, as this was one of the knowledge-sharing enablers tested in this study. The networks also needed to organise meetings for members to meet in person, as this is one of the tacit knowledge sharing aspects of networks. The accessible population includes all elements of the target population that the researcher has access to (Pascoe, 2014, p. 133), which for this study was members of female SMME networks that met the criteria explained above, were based in KwaZulu Natal (KZN) and that had given permission for the research to be conducted. The only three KZN-based networks that met the criteria all agreed to allow the research to be conducted on their members. These three networks were – Women in Business, Business Women's Association Durban and KZN Women in Business (KZN WIB). The total accessible population of members of the Women in Business network was approximately 350. For KZN WIB, the total accessible population was 182, and for BWA, approximately 2500, giving a total of 3032.

3.6.2. Sampling

For quantitative research, each subject in the sample must have an equal chance of been drawn from the accessible population (Pascoe, 2014, p. 136) allowing results to be generalised (Sekaran & Bougie, 2016, p. 22). A census is suitable for quantitative research methodologies, where a census is the equivalent of sampling the entire accessible population (Parker & Gallivan, 2011, p. 2). A census survey was used for this research instead of a probability sampling method. The advantages of census surveys are that all members are able to participate, it reduces inaccuracies and sampling errors and it facilitates administration. (Parker & Gallivan, 2011, p. 4). This last point is particularly relevant, as the organisers of the SMME networks were administrating the survey, and it was less onerous for them to send the survey to their entire membership database. A census has the advantage of reducing non-coverage problems, and are also known as full coverage probability samples (Andrews,

Nonnecke, & Preece, 2007, p. 8). Thus, in order to improve the reliability of the results and reduce sampling error, the entire membership list for each network were requested to complete the survey.. This meant that all members of the accessible population – the female SMME networks - had an opportunity to be represented in the survey (Parker & Gallivan, 2011, p. 4). The SMME network organisers were able to email their complete membership list without having to randomly sample from the list. There were two reasons for having the organisers email their members – firstly, the increased likelihood of the members answering the survey on request from their network organiser, rather than from an unknown researcher. Secondly, it was easier for the network organisers to administer the process by emailing their whole database, while protecting their members' privacy. According to Parker and Gallivan (2011, p. 4), census surveys have the added advantage of improving demographic data collection. This is particularly relevant for this research as some demographic data collection was required for one of the research objectives. As a whole population sampling technique it was effective in ensuring unbiased and precise survey results, providing accuracy and increasing generalisability (Parker & Gallivan, 2011, p. 4; Sekaran & Bougie, 2016, p. 242).

3.6.3. Sampling Frame

A sampling frame is a list that contains all members of the accessible population (Pascoe, 2014, p. 136). Technically there were two sampling frames per accessible female SMME network - the larger social networking group on Facebook, and the official active membership list of the network retained by the organiser of the network. The latter membership list was used as it had authenticated member contact details. This list was far smaller than the list of members of the social networking groups but allowed for a more reliable and credible sampling frame. According to Sekaran and Bougie (2016, p. 265) if an online community is surveyed, there is tendency towards self-selection which can create systematic bias. In order to remove this likelihood of bias, the active membership list was selected as the sampling frame. For this study, the sampling frame was the membership lists of the three accessible female SMME networks. Permission was granted by the organisers of the three female SMME networks (see Appendix C). Whereas the social media membership numbers were in the thousands per network, the active membership list were a lot lower, with approximately 350 for WIB, 185 for KZNWIB and 2500 for BWA.

3.7. Data Collection

3.7.1. Constructs, Variables and Measures

Measurement of the constructs was based on literature, using previously validated scales with minor variations. Each of the constructs in this study were measured by a set of related questions. The extent to which these groups of questions measured the same construct was determined using Cronbach's alpha, a measure of internal consistency which estimates correlation averages (Tavakol & Dennick, 2011, p. 53). Goodness of measures refers to the assurance that the survey is measuring the right variables accurately (Sekaran & Bougie, 2016, p. 220). If the Cronbach alpha is too low, the test is unreliable, too high and the test is too long (Tavakol & Dennick, 2011, p. 53). The scales selected for this study's constructs from literature were found to fit in the optimal range for Cronbach's alpha in previous studies and are provided below for each knowledge enabler construct.

Knowledge

The first construct was knowledge itself. In this research, the nature of knowledge was conceptualised as being broadly classified as explicit or tacit. Explicit knowledge can be captured and is easily transferred, especially electronically, while tacit knowledge is more difficult to formalise and is more often transferred in personal, face-to-face interactions (Becerra-Fernandez & Sabherwal, 2014, p. 25). Specifically, explicit knowledge is more structured, systematic and technical; it can be codified, stored and reused (Smith, 2001, p. 315). On the other hand, tacit knowledge is demonstrated through story-telling and demonstrations through mentoring and conversations (Smith, 2001, p. 314). Both tacit and explicit knowledge sharing were measured, using an established measure by Lee (2001) with a Cronbach's alpha of 0,9 for explicit knowledge sharing and 0,76 for tacit knowledge (Lee, 2001, p. 330). These were measured using a five-point Likert scale. The Cronbach's' alpha for explicit knowledge was found to be 0.82 for this study, while the alpha for tacit knowledge was calculated as 0.86. These Cronbach's were within the acceptable score suggesting a high reliability of the scales. According to Sekaran and Bougie (2013), reliabilities in the range of 0.7 – 0.79 are acceptable, and those above 0.8 are good. The questions were slightly adapted because Lee (2001) was measuring knowledge shared with service providers, so reference to service providers was removed from each question, without changing the meaning of the question. The following questions were used for this study, as found in Appendix A.

Explicit knowledge (Lee, 2001, p. 333)

We share business reports and proposals with each other

We share business manuals, models and methodologies with each other

We share each other's successes and failures with each other

We share business knowledge obtained from newspapers, magazines, journals, and television

Tacit knowledge (Lee, 2001, p. 333)

We share know-how from work experience with each other

We share each other's know-where and know-whom

We share expertise obtained from education and training

The inter-item correlation for explicit knowledge showed a lower correlation between *sharing business reports and proposals* and *sharing of business successes and failures*. The Cronbach's alpha if *Sharing successes and failures* was removed from the scale was .84, slightly higher than the overall Cronbach's alpha. The scale was previously validated however, and the overall alpha of .82 was high enough to keep all 4 items in the scale, in that it is a reliable measure of the construct explicit knowledge. The inter-item correlation for tacit knowledge was high between all items and the scale would not be improved by removed any particular item.

The next four constructs to be considered and operationalised are directly related the knowledge sharing enabling variables specified in the conceptual model. These are the independent variables. This will be followed by conceptualisation of the dependent variable – knowledge sharing behavior.

Trust

Smith and Lohrke (2008, p. 317) distinguish between two types of trust – cognitive, (competency-based) and benevolent (interpersonal) trust. Rhodes et al. (2008, p. 87) acknowledge the necessity of understanding competency-based trust in knowledge sharing as a relational factor. Competency-based trust is also of relevance to this study as a female SMME network is a professional network. Van den Hooff et al. (2003, p. 128) developed a scale to measure trust in a knowledge sharing community, with a

Cronbach's alpha of 0.76, using 4 questions on a 5-point Likert scale. The first two questions are related to benevolent trust and the last two questions are related to cognitive trust. The only change made from the source for this scale is the use of the word "network" in place of the word "community". This is simply for consistency in the context of the overall questionnaire for this study, to avoid potential for confusion among respondents. The Cronbach Alpha was 0.898 indicating a high level of inter-item reliability in the trust construct. The questions in the questionnaire in Appendix A related to trust are as follows:

Trust

Other members of this network help me when I have a problem concerning my business

I can rely on the other members of this network to support me in my business

I can count on the other members of this network to do what they say

I have faith in the skills of the other members of this network.

Social identity

Social identity refers to the shared meaning that group members derive from belonging to a network, so that members give preference to that group (Mariotti, 2005, p. 14). It refers to the cohesiveness offered by identifying with a particular group, such as a female business support network. Research has been undertaken into this area, therefore questions in the survey around this variable use a previously validated 5-point Likert scale adapted from Chiu et al. (2006), the name of their community replaced for this questionnaire with the word "network", again for consistency purposes, and with an alpha of 0.9 (Chiu et al., 2006, p. 1879). This study confirms this level of inter-item reliability with an Alpha of 0.92.

Social identity

I feel a bond with the other members of my network

I am proud to be a member of my network.

I have a feeling of togetherness or closeness in my network

I have a strong positive feeling toward my network.

Social media usage

According to Cao et al. (2015, p. 256) social media allows members of networks to access other members and their resources. Social media platforms used by the accessible female SMME networks include Facebook, Twitter and Linked-In. The one platform they all have in common is Facebook, specially the use of Facebook groups. Social networks allow members to collaborate and connect socially, building up their networks (Maree, 2017, p. 964). Jenkins-Guarnieri, Wright, and Johnson (2013, p. 39) conceptualise social media usage as the degree to which social media is integrated into people's routines and how much importance they place on their connections to users. They developed a two-dimensional scale to measure social media usage, based the intensity of Facebook usage scale, developed by Ellison, Steinfield, and Lampe in 2007, and adapted later for groups (Maree, 2017, p. 965; Valenzuela, Park, & Kee, 2009, p. 887). However this scale had a number of criticisms, particularly because it failed to measure the integration of social media usage into people's daily lives (Maree, 2017, p. 963), which is why the improved Social Media Use Integration scale by Jenkins-Guarnieri et al. (2013) has been selected for this study. Specifically, the ISR, or integration into social routines scale dimension is most relevant to this study to measure social media usage by members of female SMME networks. The other dimension of this scale looked at emotional connection to Facebook, so was not relevant for this study. The ISR scale looks at usage in terms of integration into daily use, and was selected as it has recently been tested in a South Africa context, and was shown to have a Cronbach alpha of 0,766 (Maree, 2017, p. 968). This study found a comparable alpha of 0.77. Of relevance to this study, Maree (2017, p. 970) recommends further research into the dimensions of this scale and forms of social media. The questions making up the ISR scale, and used in the questionnaire, with the exception of one negative question, which would need to be reversed scored and was therefore removed for consistency purposes, are as follows:

<u>Social Media Usage</u>

I enjoy checking my network's Facebook account

Using Facebook is part of my everyday routine

I would be disappointed if I could not use Facebook at all

I respond to content that my network and others share using Facebook

Shared goals of the SMME network members

This construct concerns the joint vision members of the SMME network share, which creates bonds and cohesion in a group (Chow & Chan, 2008, p. 260; Inkpen & Tsang, 2005, p. 153). The premise is that network members will act in their collective self-interest if they share goals to their mutual benefit (Leana & Pil, 2006, p. 354; Tsai & Ghoshal, 1998, p. 465). Several studies have developed scales to measure this, based on validated 5-point Likert scales. The scale applicable for this research is based on the study by Chiu et al. (2006), again with the substitution of the word “community” with network, and with a Cronbach’s alpha of 0,88 (Chiu et al., 2006, p. 1880). The Alpha for this study was measured at 0.64, and is detailed in the next chapter. The following questions make up this scale:

Shared goals

Members of my network share the goal of helping others solve their professional problems.

Members of my network share the same goal of learning from each other.

Members of my network share the same value that helping others is pleasant.

Knowledge sharing behavior as the dependent variable

Knowledge sharing behaviour is the dependent variable in this study and concerns the degree to which the female members of the network actually share their knowledge with other members of the network. Knowledge sharing behaviour supports the conversion of social, tacit knowledge that can be gained in a social network, into individual, private knowledge that can be used by an entrepreneur (Ma & Chan, 2014, p. 52). An established scale to measure knowledge sharing behaviour developed by Van den Hooff et al. (2003, p. 128) was selected because it was created specially to measure knowledge sharing in communities that have a virtual presence, and had a Cronbach alpha of 0,87. The alpha for this study was measured at 0.897. In another paper, Van den Hooff and De Ridder (2004, p. 118) further divided and extended his scale to divide knowledge sharing behavior into knowledge donating behaviour and knowledge collecting behavior, where the former concerned the behaviour relating to giving knowledge and the later to receiving knowledge. Together they both make up the knowledge sharing behaviour construct, given that sharing implies a two-way reciprocal transfer of knowledge. Making up this scale are:

Knowledge sharing behaviour

Knowledge donating behaviour:

When I've learned something new, I tell the other members of my network about it

I tell the other members of my network what I know, when they ask me about it

I tell the other members of my network about my skills, when they ask me about it

Knowledge collecting behaviour:

When they've learned something new, other members of my network tell me about it

I ask other members of my network what they know when I need particular knowledge

The other members of my network tell me what they know, when I ask them about it

The other members of my network tell me about their skills, when I ask them about it

3.7.2. Research instrument

The instrument selected for this study was a survey, specifically a close-ended questionnaire. A cross-sectional survey design has been employed, where the research instrument is deployed once only, and data gathered once-off (du Plooy-Cilliers & Cronje, 2014, p. 149; Sekaran & Bougie, 2016, p. 104). Surveys are ideal for collecting behavioral and attitudinal descriptive data (Sekaran & Bougie, 2016, p. 97). Since the sampling frame contained email addresses for each of the female-owned businesses, the survey link was emailed to the network members. The main advantages of an online survey for this study were the low cost and fast speed of communication, with email being a commonly used communication method in business (du Plooy-Cilliers & Cronje, 2014, p. 152; Sekaran & Bougie, 2016, p. 242) . Although the accessible networks have an online presence in the form of social media, it was decided not to distribute the questionnaire link via social media due to the disadvantages associated with this method, including self-selection and systematic bias, the lack of validity of authenticity of members, and the inability to randomly select subjects, which would have reduced the reliability of results (Hewson, 2003, p. 291; Sekaran & Bougie, 2016, p. 265; Wright, 2005). Electronic questionnaires distributed by email have the further advantages of being easy to administer and process, the ability to collect a larger amount of standardised quantitative data, a wide geographic

reach and convenience for the respondents in terms of being able to answer the survey at their leisure (du Plooy-Cilliers & Cronje, 2014, p. 160; Sekaran & Bougie, 2016, p. 144). The major disadvantage of online questionnaires is the low response rate (Sekaran & Bougie, 2016, p. 143). In an effort to mitigate this, the organisers of the networks were enlisted to encourage members to complete the survey, with a follow-up email request. Other disadvantages of online surveys, such as computer and general literacy (Sekaran & Bougie, 2016, p. 144) were less of a problem with this study due to the characteristics of the subjects being females in business who belong to an SMME network that uses social media, therefore the respondents were already mostly computer literate. The questionnaire was designed to be easy to navigate and complete, with no advanced computer literacy needed.

The online questionnaire was created using Google Forms, and can be found in Appendix A. The questionnaire was distributed to the sample by email, which explained the nature of the research and included a link to the online survey. A follow-up email, again with the survey link, was sent to the sample by the organisers of the female SMME networks, in an attempt to increase the response rate. Further measures included keeping the questionnaire as short, simple, uncluttered and user-friendly as possible.

Questionnaires must be carefully designed in terms of wording of specific questions, scales selected and overall flow and appearance (Sekaran & Bougie, 2016, p. 145). The questionnaire began with a brief introductory section, explaining the purpose of the research, and assuring the respondents of the confidentiality of their responses. The respondents' name was not requested. Separate to the questionnaire, a formal letter introducing and authenticating both the research and the researcher was attached to the email (see Appendix B). The email requesting the participants to complete the survey was emailed to the members by the organiser of the network. As part of the request for them to complete the questionnaire, the participants were notified that by clicking on the link they are giving their consent and directed their attention to the attached letter. On the questionnaire, the participants acknowledged their permission by checking a box to give their consent. This was part of the introduction section on the first page of the questionnaire.

The questionnaire consisted of closed-ended questions, in line with the quantitative research methodology. The questions were grouped into sections. The first section contained basic questions about the female-based SMME network the respondent is a member of. These were easy questions that eased the respondents into the

questionnaire. The next sections consisted of a series of questions relating to each of the enablers of knowledge sharing and knowledge sharing behavior. These questions were based on validated scales developed by previous researchers, as described in the previous chapter, designed to measure the main constructs of the study. The final section of the questionnaire contained demographic questions about the female entrepreneur and basic questions about their business, such as age, number of employees and length in business. This is directly related to the last research objective. The overall flow and sequencing of questions was designed in accordance with recommendations to lead the respondent through the survey in a logical and unobtrusive manner, with the demographic questions at the end (du Plooy-Cilliers & Cronje, 2014, p. 152). Sound questionnaire design sought to ensure wording and scales were presented in an objective and useful way (Sekaran & Bougie, 2016, p. 150). All sets of questions in the questionnaire were purposefully selected and grouped according to the research objectives.

The questions in the first and last section of the questionnaire, as well as those to measure the social media usage, had predominantly nominal and ordinal scales. Nominal scales allow categorisation of potential answers into groups, for example a question on respondents' gender would have two possible answers on the nominal scale (Sekaran & Bougie, 2016, p. 208). The ordinal scale was used to group numerical data, for example, time on social media. For numerical data such as age and years in business, the respondent was asked to enter the number in a validated range, so that it can be treated as continuous data. Questions related to the other knowledge enabler constructs and knowledge sharing behaviour were measured using a 5-point Likert scales, where a 1 indicated that the respondent strongly disagrees with the statement, and a 5 that they strongly agree. A 5-point scale is commonly used in survey-based research, with a middle neutral option allowing sufficient description of the respondent's opinion and the option to remain undecided, so they are not forced to leave out the question or provide an incorrect answer (Willits, Theodori, & Luloff, 2016, p. 134). Likert scales are made up of two parts – a statement, and the measurement of the level of agreement or disagreement the respondent has with the statement (du Plooy-Cilliers & Cronje, 2014, p. 159) and are commonly used to measure opinions and levels of agreement (Leung, 2011, p. 412).

Some of the advantages of this type of electronic survey were that was easy to setup, distribute, administer, and analyse responses. It was extremely quick to deliver and

receive responses and it was convenient for respondents (Sekaran & Bougie, 2016, p. 144).

A pretest of the questionnaire was conducted over the period of a week, with participants from Women in Business - one of the female SMME networks that the study was based on. The organisers of WIB and BWA were also asked to review the questionnaire. The intention of the pretest was to check the questionnaire before sending to the entire sample. The wording and response to the questions was tested. The results of the pretest yielded no problems in terms of understanding the questions, instruction or online completion of the questionnaire. Based on feedback from the 10 participants in the pilot, who were selected using convenience sampling, the time taken to complete the survey was less than originally estimated. As such the time indication on the main survey was reduced from 10 minutes to approximately 5 minutes. The first question was separated into two, so that the one question asked which network they received the link to the questionnaire from, and the other which other networks they belonged to. This was because the pretest respondents indicated that they may have different responses when they belonged to more than one network. Further, the results of the pretest indicated the need to extend the scale for the number of years in business, and to add more options for number of years of membership in the network. Finally, for the social media usage section of the questionnaire, clarity was provided by adding the words “your network” when referring to Facebook related questions. The organisers of the female SME networks also indicated their satisfaction with the questions, order of the questionnaire and their role in the process. The only suggested change was to include a progress bar in the questionnaire so that their members would know how far they were in the survey completion process. This recommendation was implemented.

3.7.3. Data collection

3.7.4. The organisers from each of the three female SMME networks were notified to send the link to the survey to their membership list. The organisers emailed their membership list over the period of a week, with a follow-up email sent a few days later in an attempt to improve response rate. The BWA network had the largest membership list (2500), followed by WIB (350) and KZNWIB (182). If a probability sample was drawn, a sample response of 350 would have been required, based on the total number of members from the three networks at 3032 people. For this study a census approach was used as the questionnaire was sent to the entire accessible population. However, even with incentives and encouragement from the network organisers with appeals to their members that the survey would take no more than 5 minutes, response rate was poor. After a period of two weeks the survey was closed so that statistical data analysis could begin. A total of 118 responses were received, for the BWA network, 50 responses were received, for WIB 19 and for KZNWIB 49. The response rate for each were therefore BWA 2%, for WIB 5% and KZNWIB 37% giving an overall response rate of 3,9%. This is a low response rate and is considered a limitation of the study.Data preparation

Data was exported from the Google Sheet associated with the survey form into Microsoft Excel. Here the variables were coded and then imported into SPSS. The data was cleaned for missing values. One case had to be removed as apart from demographic data, most of the other values were missing. The missing values for number of years of membership and number of years of business experiences, being continuous variables, were replaced with the mean value. There was only one case each where these values were missing. The networks the respondent indicated they belonged to were counted. If no other networks were selected, then the default of one, being their main network, was counted.

3.8. Data Analysis

The data collected from the survey was statistically analysed in line with quantitative methodology. The data was coded and captured into the statistical package SPSS. The analysis strategy was reflective of the research questions. The first stage was summarise the data collected in a univariate analysis of the categorical questions. Particularly the questions related to the first research objective – describing knowledge

in female SMME networks, and the last objective concerning the demographic and business-related factors of the female entrepreneurs who are members of the network. This yielded descriptive data in the form of frequencies expressed as percentages and then represented in bar and pie charts. The mode was be determined for the questions yielding discrete nominal data such as those related to benefits of the network. Mode determines the most common response, and is the only possible measure of central tendency for nominal data (Kahn, 2014, p. 212).

Data about each knowledge enabling factor in the questionnaire, tested with a series of five or more Likert scales questions, was be summated and the composite scores analysed using descriptive statistics. Treating the data collected from summated Likert scale questions as a single interval variable is contentious as some argue that the data should be treated as ordinal (Willits et al., 2016, p. 132; Wu & Leung, 2017, p. 527). Although there has been some debate, since each series of Likert scale questions in the questionnaire were set to measure one particular variable (as per the Constructs section above), it is accepted practice for the results to be summated and treated as interval data (Wadgave & Khairnar, 2016, p. 67; Willits et al., 2016, p. 133). This allows for more sophisticated analysis and has been used more often than not, providing reliable results as long as there is an acceptable Cronbach's alpha (Leung, 2011, p. 413). The Cronbach Alphas for this study were therefore determined. Although there is some debate over applying the more useful parametric tests to Likert-scale data, with the use of validated scales, parametric analysis of the summated Likert scales was appropriate (Wadgave & Khairnar, 2016, p. 67). This allowed for measures such as the mean to describe the averages of the data and the standard deviation to determine the variance in the responses (Sekaran & Bougie, 2016, p. 284).

In terms of bivariate analysis, crosstabulations provide a useful way to determine the association between the category data in order to summarise the answers from the questionnaire related to reasons for membership network, membership length and age. These are represented in a series of stacked bar graphs. There was also bivariate analysis of category and interval data, for example knowledge sharing behaviour by age and knowledge sharing type.

Presenting the relationship between each of the knowledge enablers and knowledge sharing behaviour was at the heart of this research. A more rigorous analysis of the data in the form of inferential statistics, allowed for predictions to be made and measured the significance of the research (Sekaran & Bougie, 2016, p. 306). This analysis determined if there was a statistically significant effect with a confidence level

of 95% (Sekaran & Bougie, 2016, p. 301). Relationships between the independent and dependent variables were measured using Pearson's correlation coefficient and the predictive potential tested using linear regression analysis (Sekaran & Bougie, 2016, p. 308). A Spearman correlation was also carried out to determine if the results were significantly different, given the original ordinal scale of the underlying Likert items making up each scale (Norman, 2010, p. 632). Differences between Spearman and Pearson Correlational analysis were too small to warrant reporting both, therefore Pearson's correlation coefficient was reported in line with other parametric tests conducted. This provided the analysis of the relationship between each of the independent variables – the knowledge sharing enablers, and the dependent variable – knowledge sharing behaviour.

3.9. Data Quality

Goodness of measures refers to the assurance that the survey is measuring the right variables accurately, which, for quantitative research, is tested by determining the reliability and validity of the research (Sekaran & Bougie, 2016, p. 220). Reliability was tested by ensuring internal consistency through the Cronbach Alpha, which estimates correlation averages (Tavakol & Dennick, 2011, p. 53).

The summary table below shows the Cronbach Alpha scores (to two decimal places) for each variable in the study:

Table 3-1 Cronbach Alphas

Variable/Construct	Expected	Actual
Explicit knowledge	0.9	0.82
Tacit knowledge	0.76	0.84
Knowledge sharing behaviour	0.87	0.90
Trust	0.76	0.90
Social Identity	0.90	0.92
Social media usage	0.77	0.77
Shared goals	0.87	0.64

Reliability can be further established by the methodology followed as explained above, where another researcher following the same process could be expected to obtain similar results (Koonin, 2014, p. 254).

Content validity by means of questionnaire verification (Koonin, 2014, p. 256) was ensured through the pretest of the questionnaire by the network organisers. Each construct was tested using a previously validated scale, as per the literature and the Construct section above, this tested that the questionnaire measured what it was meant to so that there is a link between the theoretical construct and the measurement scale (Koonin, 2014, p. 256), for example knowledge sharing behaviour. This is important as the results would not be useful if the measurement of the constructs was invalid, which is why previously validated scales have been used (Sekaran & Bougie, 2016, p. 289). The study will be replicable in that the same study could be repeated with a different sample of the population, however external validity is dependent on the number of responses received, which was lower than required (118) (Koonin, 2014, p. 257).

3.10. Ethical Considerations

This study is guided by the strict UKZN Research Ethics requirements. Prior approval was obtained from the UKZN Research Office before proceeding with the research. The ethical clearance letter can be found in Appendix E. All respondents will be assured that their participation in the survey is voluntary and that their confidentiality is strictly ensured – this informed consent letter can be found in Appendix B. Permission was obtained from the owners or organisers of the female SMME networks, as evidenced in Appendix C. Ethical guidelines specific to online survey research ensured that the respondents were aware they could withdraw at any time and that data would only be captured once they click on the submit button (Hewson, 2003, p. 293). Contact details were provided at the introduction to the questionnaire, in case the respondents had any queries. Data was password protected to ensure security. The nature of the research means that ethical considerations around subjects being harmed or embarrassed in the survey process were not applicable.

3.11. Conclusion

In summary, the research methodology involved data collection by means of an online cross-sectional survey. The sampling strategy was consistent with a

post-positivistic paradigm and the practical realities of sampling SMME networks with an online presence, utilising the membership lists of the accessible South African female SMME networks. The data was analysed with descriptive and interpretive statistics generated in SPSS using correlational and regression analysis to determine the relationships between the variables, being the knowledge enabling dependent variables and the knowledge sharing behaviour dependent variable. This analysis can be found in the next chapter containing the results of the study.

Chapter 4. RESULTS

4.1. Introduction

The objective of this chapter is to present the key findings of the research, as they relate to the research objectives. The results from the survey are presented in order of the sections of the questionnaire, except for the last section – the demographic data, which is presented first. This allows for presentation of the respondent profile. Following the demographic data, the results from the section on the business network and knowledge types is presented. These are followed by the results for each of the scales developed to measure the knowledge enabling factors and knowledge sharing behaviour. Results of the hypothesis tests to analyse the relationships between these variables follows.

4.2. Sample profile

As detailed in the methodology chapter, a lower than anticipated response of 118 questionnaires were completed, instead of the required 340 responses for the sample size to be representative (Raosoft.com, 2004). One of the results had to be discarded for incompleteness, leaving a total of 117 usable responses. A full analysis of the respondents' demographic and business profiles can be found in Appendix D.

4.2.1. Demographic profile

This section contains a description of the participants. A summary table is shown below, followed by a more detailed analysis of each demographic item. The summary shows the network member's age group, years in business (collected in groups of 5-year intervals, which were grouped into categories of 10 years for reporting purposes in the summary) and highest education level attained. This is shown in Table 4.1 below.

Table 4-1 Demographic summary

	Frequencies (percentages)					Missing
Age	21-30	31-40	41-50	51-60	>60	
	7 (6%)	25 (21.4%)	48 (41%)	30 (25.6%)	7 (6%)	0
Years in Business	1-10	11-20	21-30	31-40	Over 40	
	27 (23.3%)	37 (31.9%)	32 (27.6%)	18 (15.5%)	2 (1.7%)	1
Highest Education	Secondary school not completed	Secondary school completed	Tertiary completed	Post-graduate completed		
	1 (0.9%)	6 (5.2%)	54 (47.4%)	55 (46.6%)		1

The ages of the participants were recorded in 5 groups. The most common age group of the members was the 41-50 years group, the numbers in the age groups around that more relatively evenly spread.

The most common category of years in business was the 16-20 years group, followed by 1-5. The 20 to 30 years of business experience was also well represented.

A high level of education is indicated, with 94% of members having more than a secondary school education such as an undergraduate or post-graduate degree. The split between members having completed a tertiary qualification and a post-graduate qualification was almost identical. Nearly half the members report having a post-graduate qualification, which indicates a highly educated membership base.

Cross-tabulation of age and education

Further analysis of education by age group shows that over 23% of the members are in the 41-50 year age group and hold a post-graduate qualification.

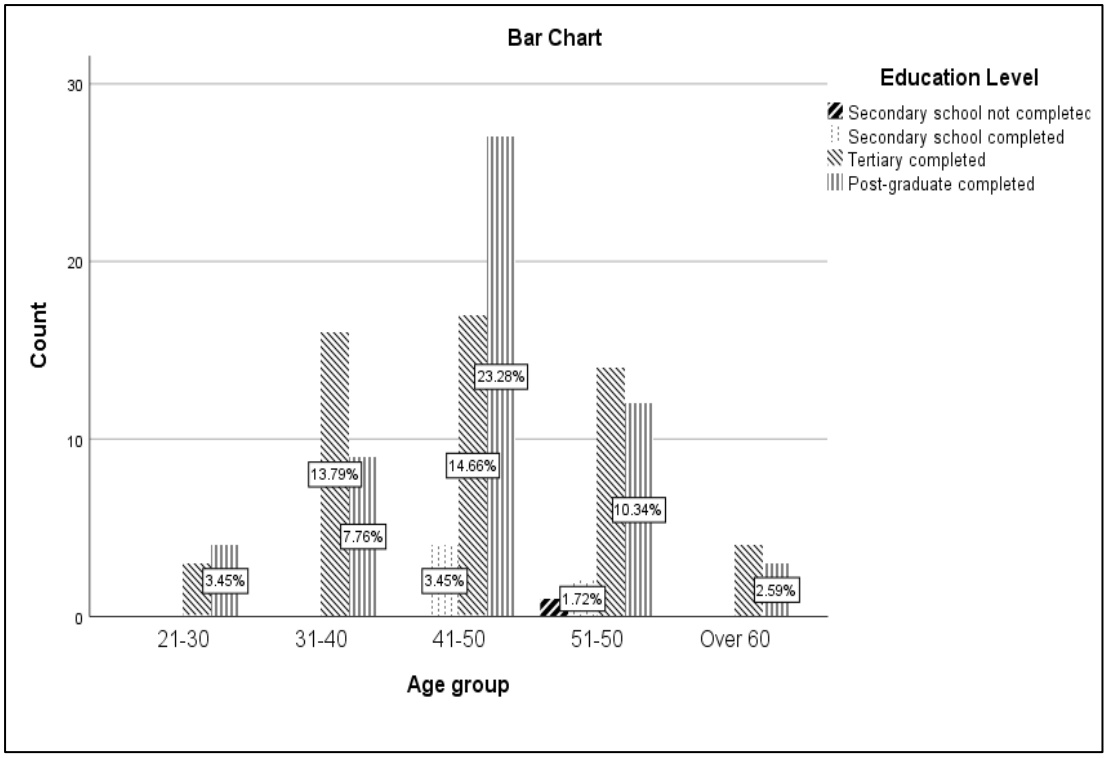

Figure 4-1 Sample Profile: Age by Education Level

4.2.2. Business profile

Respondents were asked which business sector their SMME falls under. The business sector choices the respondents were provided with in the questionnaire were taken from StatsSA's breakdown of business sectors in the South African economy. Respondents were also asked to indicate the number of employees in their business.

These results of this analysis are shown in Table 4.2 below.

Table 4-2 SMME Business Profile

	Frequencies (percentages)									Missing
Business sector	Community	Finance/ Business services	Transport & Coms	Trade/ Accommodation	Construction	Wholesale/ Retail	Serv-ices	Manufacturing	Other	
	6 (5.2%)	15 (13%)	6 (5.2%)	3 (2.6%)	2 (1.7%)	8 (7%)	38 (33%)	7 (6.1%)	30 (26.1%)	2
Employees	1-10	11-20	21-30	31-40	41-50	61-70	71-80	91-100	>100	
	84 (71.8%)	13 (11.1%)	3 (2.6%)	2 (1.7%)	3 (2.6%)	1 (0.9%)	1 (0.9%)	1 (0.9%)	9 (7.7%)	0

Thirty three percent of the members' businesses fall within the *Services* sector. There was an *Other* option provided and many respondents chose to use this to specify their business sector as they did not believe it fitted within the given categories. However, when looking at the sector the respondents entered under the *Other* category, many of these could be considered as services, which could fall under the *Services* or *Finance and Business Services*. For example, education, legal, IT and health/beauty are examples of entries made under the *other* category. When reclassifying these into the *Services* and *Finance and Business Services* sectors, the percentage of businesses rises to 48.7% and 16.5% respectively. This implies that the majority (65.2%) of the female SMME network businesses are services-related.

One indicator for the classification of an SMME as small, medium or micro is number of employees. By far the most (71.8%) of the members business employ between 1 and 10 people, implying that most members' businesses fall within the micro category of SMMEs. Further analysis found that 34.8% of the businesses were in the services sector with less than 10 employees.

4.2.3. Network profile

It is beyond the scope of this study to compare networks, however some summary network comparison data is presented here to add value to the sample profile. This includes main network they are a member of, and the total number of networks they have joined. The number of years of membership in the main network, and their reason for joining are also analysed in Table 4.3 below:

Table 4-3 Female SMME Network Profile

	Frequencies (percentages)				**Missing**
Network membership	WIB	KZNWIB	BWA		
	18 (15.4%)	49 (41.9%)	50 (42.7%)		
Number of networks	1	2	3	4	
	75 (64.1%)	32 (27.4%)	9 (7.7%)	1 (0.9%)	0
Years of membership	1-5	6-10	11-15	16-20	
	81 (73.6%)	26 (23.7%)	1 (0.9%)	2 (1.8%)	7
Reason for belonging	Advice, mentoring and knowledge	Leads, sales and contacts	Personal, emotional and social support	Other	
	61 (52.1%)	37 (31.6%)	14 (12%)	5 (4.3%)	0

The membership size for BWA was a lot higher (approximately 2500) than the other two networks (500 combined) so the response rate should have been higher for this network. However, the BWA membership response (50) was only marginally higher than KZNWIB (49). The WIB network had by far the lowest response rate, while KZNWIB had the highest response rate at 32.7%. The majority of members (64.1%) belonged to just the one main network. There were a number of smaller local networks the members belonged to, in addition to being members of the main three networks considered in this research. More than half (54.5%) of the respondents have been members of their network for

3 or less years, with 73.6% having been members for less than 5 years. Many business networks have not been established for long, thus few (<3%) of respondents have been members for more than 10 years. BWA was established in 2000, KZNWIB is the oldest of the three having been established in 1995. WIB was founded in 2005. This question had a large number of missing responses, possibly because the question asked for an exact number instead of a range, which members may not have known.

The main reason the respondents joined their network was for *advice, mentoring and knowledge* with more than half the members choosing this reason (52,1%), followed by *leads, sales and contacts* (31,6%).

4.3. Findings Related to the Knowledge Sharing Enablers

The main findings will be presented in terms of the research objectives. Although many interesting results were obtained, this analysis is limited to those that assist in answering the research questions and hypotheses. Data was collected from 5-point Likert-scale items where the lower the scale the lower the level of agreement. Therefore, a response of 5 would mean the respondent strongly agrees with the statement.

4.3.1. The extent and nature of knowledge sharing in female SMME networks

A series of 7 Likert-scale questions were asked to determine the nature of the knowledge shared by members of the network, and the extent of the sharing of each type. The Likert scale used was a 5-point scale, where 1=strongly disagree and 5=strongly agree. The first 4 questions related to explicit knowledge, while the last 3 related to tacit knowledge. These items were drawn from the literature, as noted in the conceptualisation section of the methodology chapter. Explicit knowledge is knowledge that exists mainly in written form, such as business reports, proposals, stories and manuals while tacit knowledge is present mainly in a verbal form (Lee, 2001, p. 328). This construct is fully described in the literature review and conceptualisation section of the methodology chapter.

Explicit knowledge

Table 4-4 Explicit Knowledge

Explicit Knowledge	Strongly disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Strongly agree (5)
Share reports and proposals M=2.53 SD=1.25	35	16	43	13	9
	30.2%	13.8%	37.1%	11.2%	7.8%
Share manual and models M=2.83 SD=1.29	25	20	34	24	13
	21.6%	17.2%	29.3%	20.7%	11.2%
Share successes and failures M=4.1 SD=.0.98	3	5	17	43	48
	2.6%	4.3%	14.7%	37.1%	41.4%
Share knowledge from media M=3.33 SD=1.26	13	17	28	36	23
	11.1%	14.5%	23.9%	30.8%	19.7%

Sharing of reports and proposals had the least positive response on the Likert scale compared to the other measures of explicit knowledge sharing. It was the only item where strongly disagree had such a high frequency (35(30,2%)). Although the mode for this item was in the neutral rating, the mean (M=2.53, SD=1.25) was slightly negative, reinforcing the finding that members are less likely to reports and proposals. Sharing knowledge from media and about successes and failures were more on the positive side, with nearly 80% of members agreeing or strongly agreeing that they share failures and success (91(78.5%)), and similarly over 50% for sharing knowledge gained from the media (56(50.5%)). The sharing of manuals and models was relatively evenly rated by the respondents, with most being neutral (34 (29.3%). Therefore, the predominant type of explicit knowledge shared was successes and failure in business, with the highest mode (5) and mean (M=4.1, SD=0.98). This can be seen in Figure 4.2 below.

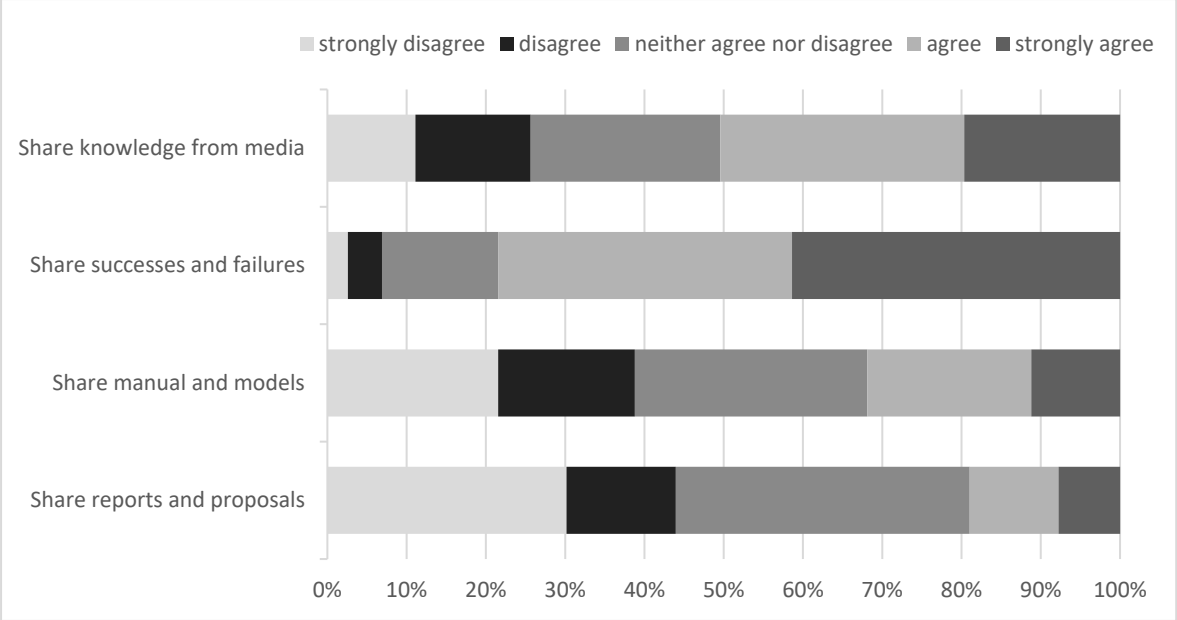

Figure 4-2 Explicit knowledge

Tacit knowledge

Table 4.5 below shows the results for items measuring the type of knowledge sharing activities that fall within the realm of tacit knowledge.

Table 4-5 Tacit Knowledge

Tacit Knowledge	Strongly disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Strongly agree (5)
Share know-how	5	9	16	45	42
M=3.94, SD=1.09	4.3%	7.7%	13.7%	38.5%	35.9%
Share know-where and know-whom	7	9	23	37	41
M= 3.82, SD=1.17	6.0%	7.7%	19.7%	31.6%	35.0%
Share knowledge from education	5	10	14	52	36
M=3.89, SD=1.07	4.3%	8.5%	12.0%	44.4%	30.8%

In general, members were more positive about sharing tacit knowledge, with all items scoring higher on the agree and highly agree categories and all the means close to 4 on the 5-point scale. Approximately three-quarters of respondents agreed or strongly agreed that they share knowledge gained from education and training (88(75.2%), closely followed by sharing know-how (87(74.5%). Sharing know-where and know-whom was also common

(78(66.6%) and had a mode of 5 – the highest on the 5-point scale. These results are represented in Figure 4.3 below.

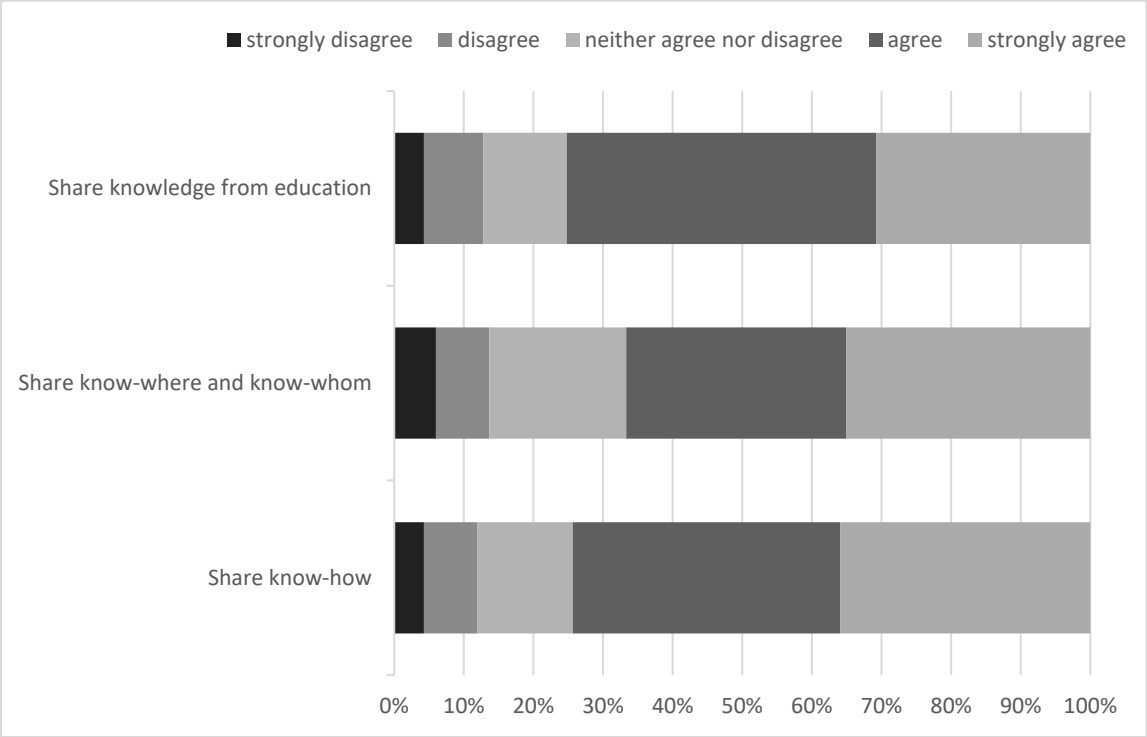

Figure 4-3Tacit Knowledge

Summated scales for Knowledge Types

The four items representing explicit knowledge were summated into a single scale representing the participant's extent of sharing explicit knowledge. Similarly, the three items representing tacit knowledge were summated. A high level of inter-item reliability was found for both scales.

Summary data are provided below

Table 4-6 Summary Data for Knowledge Types

Knowledge types	Mean	Median	Standard Deviation	Reponses	Cronbach's Alpha
Explicit knowledge	3.20	3.25	0.98	116	.82
Tacit knowledge	3.88	4	0.99	116	.84

Overall results of the extent of knowledge sharing

The results show that, on average, the network members share more tacit knowledge (M=3.88, SD=0.99) than explicit knowledge (M=3.20, SD=0.98). If the composite scores from both are measured, the extent of overall knowledge sharing (total knowledge sharing scale) tended to be positive (M=3.59, SD=0.89). This is with a Cronbach Alpha of 0.89.

Knowledge Sharing Behaviour (KSB)

Analysis of knowledge sharing behaviour, the outcome variable, will be shown next. This will also assist in addressing the first research objective - to determine the extent and nature of knowledge sharing behaviour in female SMME networks. The KSB scale was drawn from the literature review, using a 5-point Likert scale made up of seven items. The scale was originally developed by Van Den Hoof (2003, p128), who established a Cronbach alpha of 0.87 for the scale.

Of the seven questions making up the knowledge sharing behaviour scale, four are concerned with what Van den Hoff terms Knowledge Collecting, and three concern Knowledge Donating. Given that knowledge sharing was conceptualised as a two-way process, or exchange of knowledge, it is helpful to determine whether the respondents perceive their behaviour as more giving or more receiving. For this reason, before the overall KSB scale is measured, the questions were first grouped into the “knowledge donating” category, and the “knowledge receiving” category. The measures of central tendency are shown Table 4.7 below, after which a full analysis of the Likert scales can be found.

Table 4-7 Knowledge Sharing Behaviour

Nature of knowledge sharing behaviour			
	Items	Mode: (1=Highly disagree range to 5 = highly agree)	Median (1=Highly disagree range to 5 = highly agree)
Knowledge donating behaviour **M=3.82** **SD=0.83**	*When I've learned something new, I tell the other members of my network about it*	4	4
	I tell the other members of my network what I know, when they ask me about it	4	4
	I tell the other members of my network about my skills, when they ask me about it	5	4
Knowledge collecting behaviour **M=3.67** **SD= 0.89**	*When they've learned something new, other members of my network tell me about it*	5	4
	I ask other members of my network what they know when I need particular knowledge	4	3
	The other members of my network tell me what they know, when I ask them about it	5	4
	The other members of my network tell me about their skills, when I ask them about it	4	4

All modes are on the positive side, and all medians except for one item – Asking other members what they know when the respondent needs particular knowledge – were measured as a 4 out of 5. When summated, members displayed slightly more positive knowledge donating behaviour (M=3.82, SD = 0.83) than knowledge collecting behaviour (M=3.7, SD= 0.89).

The summated scale for KSB was constructed from all 7 items. The Cronbach alpha was measured at .90, removing any item would not have increased this, and this is high enough to ensure reliability of the construct. The overall

knowledge sharing behaviour indicated by the members was positive (M=3.75, SD=.84) at a 95% confidence level as this is the accepted level for business research, equating to a significance level of p≤0.05 (Sekaran & Bougie, 2016, p. 258).

KSB results

Detailed breakdown of the responses to items making up the scale are shown below in Table 4.9.

Table 4-8 Knowledge Sharing Behaviour

Knowledge Sharing Behaviour	Strongly disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Strongly agree (5)
When I've learned something new, I tell the other members of my network about it M=3.8, SD=1.03	5	5	26	47	34
	4.3%	4.3%	22.2%	40.2%	29.1%
I tell the other members of my network what I know, when they ask me about it *M=3.5, SD=1.11*	6	15	34	38	24
	5.1%	12.8%	29.1%	32.5%	20.5%
I tell the other members of my network about my skills, when they ask me about it *M=4.11, SD=0.99*	2	8	15	42	50
	1.7%	6.8%	12.8%	35.9%	42.7%
When they've learned something new, other members of my network tell me about it *M=4.15, SD=0.96*	2	6	16	42	51
	1.7%	5.1%	13.7%	35.9%	43.6%
I ask other members of my network what they know when I need particular knowledge *M=3.31, SD=1.11*	8	19	32	41	15
	7.0%	16.5%	27.8%	35.7%	13.0%
The other members of my network tell me what they know, when I ask them about it *M=3.62, SD=1.15*	4	17	32	30	34
	3.4%	14.5%	27.4%	25.6%	29.1%
The other members of my network tell me about their skills, when I ask them about it *M=3.71, SD=1.03*	4	10	30	45	28
	3.4%	8.5%	25.6%	38.5%	23.9%

The items *I tell the other members of my network about my skills, when they ask me about it* and *When they've learned something new, other members of my network tell me about it* have the highest means and lowest standard deviations. The means of these items were both above 4, which indicates the members on average agree with the statements. The stacked bar chart in Figure 4.4 below represents this data graphically.

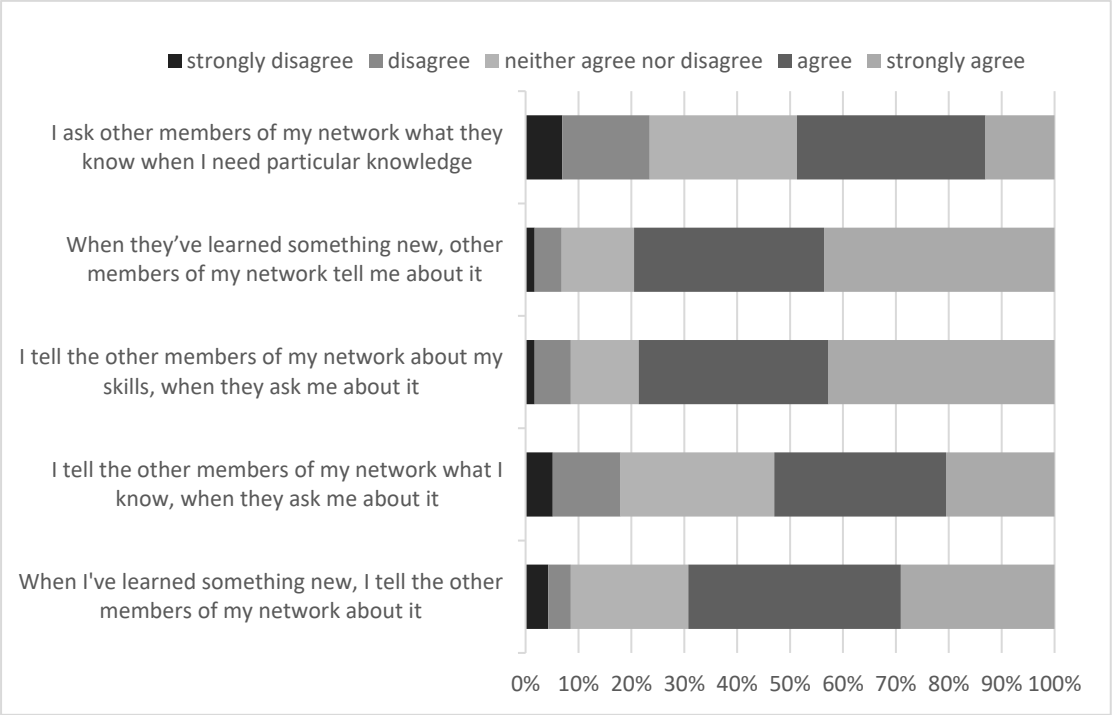

Figure 4-4 KSB

The strongest knowledge sharing behaviour was evidenced by nearly 80% of the respondents rating of the item *When they've learned something new, other members of my network tell me about it* as likely and highly likely (93, 79,5%)) This was followed closely by the item *I tell the other members of my network about my skills, when they ask me about it* (92, 78,6%). More detailed analysis on the extent of KSB based on age, business and other factors will be discussed later, when considering results related to the final objective of this study.

4.3.2. The Knowledge Sharing Enablers

Social capital comprises the knowledge sharing enablers: trust, social identity, social media usage and share goals. Trust and shared identity make up the

relational dimension of social capital, while social media usage falls under the structural capital dimension and shared goals under the cognitive dimension. These were discussed under the literature review and methodology chapters.

These knowledge sharing enablers are the independent, or predictor variables in the hypotheses for the study. The assumptions necessary for regression analysis are that the sample is random, that a linear relationship exists, that there are no extreme outliers, and that there is homoscedasticity (variability in scores are similar through high and low values) (Field, 2009, p. 133). By the nature of Likert scales being capped at 1 and 5, there can be no extreme outliers. Figure 4.5 below shows that the KSB variable as discussed above, is normally distributed.

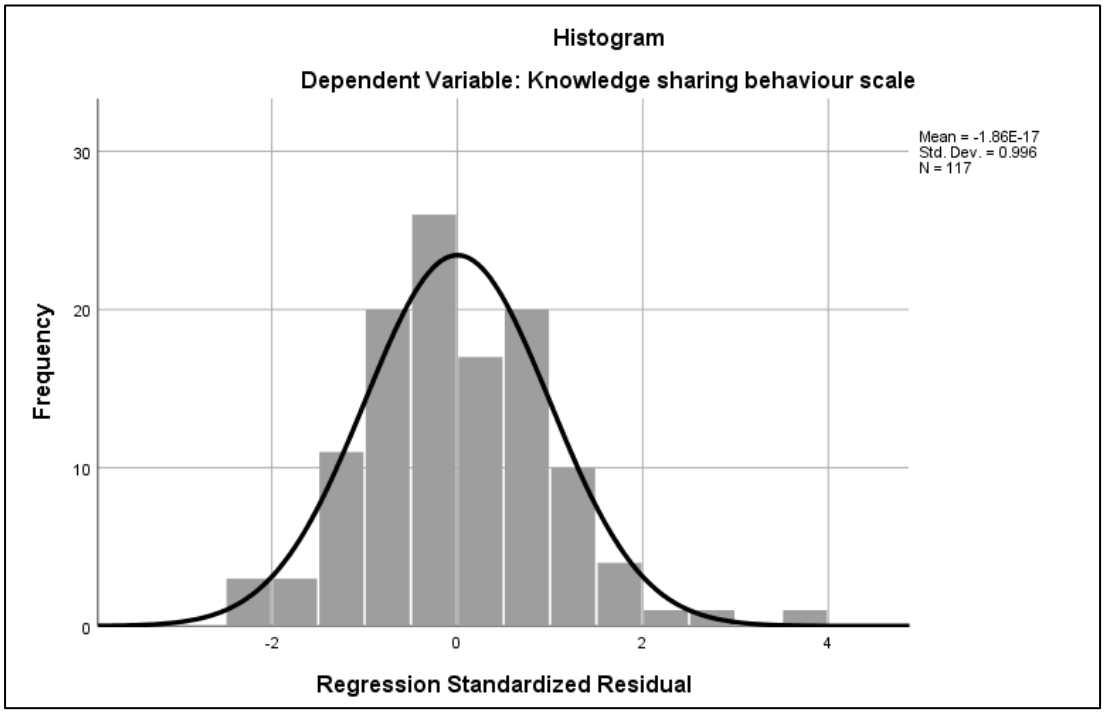

Figure 4-5 KSB Standardised Residual

First the descriptive analysis for each variable is presented:

Trust (Hypothesis 1)

This construct needs to be measured to meet the research objective "To determine the extent to which trust as a dimension of relational capital enables knowledge sharing behaviour in female SMME networks"

The four items measuring trust were all measured using a Likert scale where 1 indicated a lack of trust and 5 indicated a high level of trust.

Table 4-9 Trust Summary

Trust in network			
	Items	Mode: (1=Highly disagree range to 5 = highly agree)	Median (1=Highly disagree range to 5 = highly agree)
Trust scale **M=3.82** **SD=0.83** **95% CI:** **3.14, 3.52**	*Other members of this network help me when I have a problem concerning my business*	4	4
	I can rely on the other members of this network to support me in my business	3 and 4	3
	I can count on the other members of this network to do what they say	4	4
	I have faith in the skills of the other members of this network	4	4

The items making up the scale can be analysed for centrality using the mode and median. All items scored 4, meaning respondents agreed with the statements, except the item regarding relying on other members for support, which was neutral for median and bimodal for mode, meaning the most common answers were neutral and agree. The mean for the variable also indicated an above average level of trust (M=3.82, SD=0.83). Overall this suggests there is a positive level of trust among members of the female networks.

The summated scale has been tested in previous studies (Van den Hooff et al., 2003, p. 128) before and here the reliability is confirmed by testing the Cronbach alpha. The Alpha level was calculated as .90 indicating that that the scale had a high level of inter-item reliability in measuring the trust construct. Descriptive analysis for the trust variable is shown in Table 4.10:

A more detailed breakdown of the scale is shown below in Table 4.11, with the frequencies of responses for each rating.

Table 4-10Trust - detailed breakdown

Trust	Strongly disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Strongly agree (5)
Other members of this network help me when I have a problem concerning my business M=3.33, SD=1.29	13 11.1%	20 17.1%	23 19.7%	37 31.6%	24 20.5%
I can rely on the other members of this network to support me in my business M=3.26, SD=1.15	9 7.7%	21 17.9%	35 29.9%	35 29.9%	17 14.5%
I can count on the other members of this network to do what they say M=3.47, SD=1.06	4 3.4%	17 14.5%	37 31.6%	38 32.5%	21 17.9%
I have faith in the skills of the other members of this network M=3.82, SD=1.01	5 4.3%	5 4.3%	27 23.1%	49 41.9%	31 26.5%

The stacked bar chart in Figure 4.6 shows that the item *I have faith in the skills of other members of this network* had the highest positive response with 68.4% of respondents either agreeing or strongly agreeing with the statement.

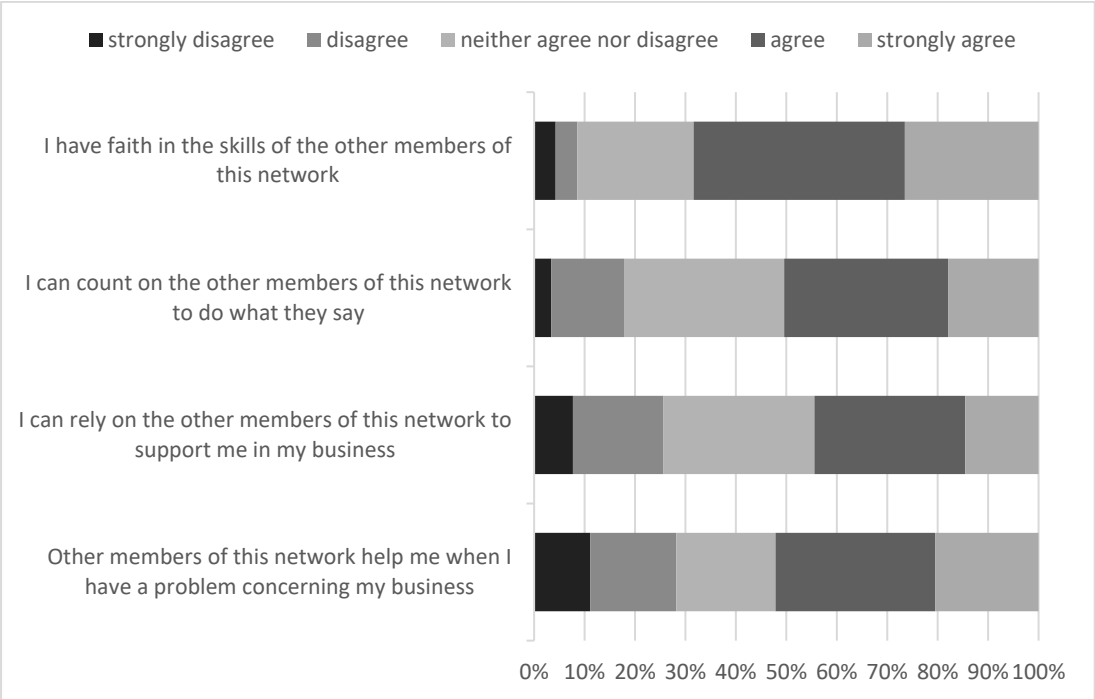

Figure 4-6 Trust graph

The null hypothesis that there is no relationship between the trust members have in their network and their knowledge sharing behaviour, can be tested by determining if there is a correlation between the two variables. Preliminary analysis was performed to ensure there was no violation of the assumptions of normality, homoscedasticity and linearity. The scatter plot in Figure 4.7 below shows a positive correlation.

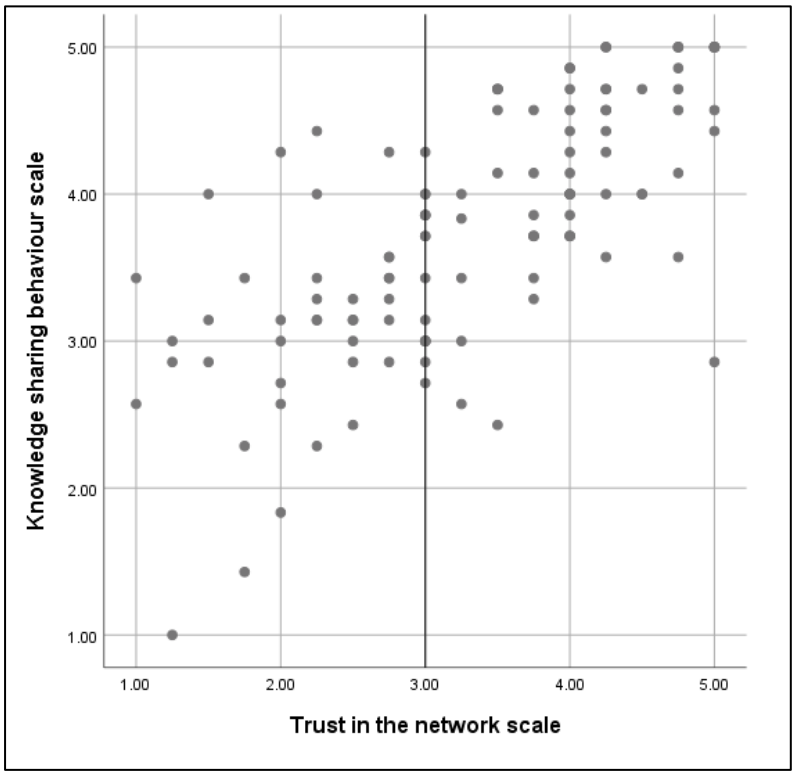

Figure 4-7 Trust Scatter Plot

The scatter plot indicates that there are few outliers (which are bound by the nature of the scale) and that the distribution is linear and positive. The strength of the relationship between the level of trust (predictor variable) and the outcome variable of knowledge sharing behaviour was tested through the application of Pearson's product moment correlation. Table 4.12 shows the outcome of this analysis.

Table 4-11 Trust - KSB Correlation

Model Summary[b]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.711[a]	.506	.501	.58987

a. Predictors: (Constant), Trust scale

b. Dependent Variable: Knowledge sharing behaviour scale

A strong positive relationship was found with r = 0.71, n=116, p <.01. The closer to 1 the coefficient is, the stronger the relationship (Pallant, 2007, p. 120). This means that high levels of trust are associated with high levels of KSB. The coefficient of determination shows that 50.6% (r^2=0.506) of the variability in KSB can be accounted for by level of trust members have in their network.

In summary, the null hypothesis tested was that the variation in KSB is not related to trust, which can be rejected based on the results. The level of trust (M=3.82, SD=1.05) is significantly correlated (r=0.71) with KSB (M=3.75, SD=0.84).

Social Identity (hypothesis 2)

This is the second variable in the relational dimension of social capital. The mean of the four items from the questionnaire making up this scale was computed to create a new variable called Social identity. The four items were derived from a previously tested scale (alpha = 0.9) measuring this construct, as discussed in the methodology chapter. To test the validity of the measure, the inter-item reliability was calculated and found to be a good indicator of inter-item reliability (alpha =0.92).

Table 4.13 below shows that all items making up the scale show positive average scores in terms of the modes and medians. The item *I am proud to be a member of my network* was the only one that showed a neutral average score.

Table 4-12 Social Identity Summary

Social identity with the network			
	Items	Mode: (1=Highly unlikely range to 5 = highly likely)	Median (1=Highly unlikely range to 5 = highly likely)
Social identity **M=3.67** **SD=1.02** **95% CI:** **3.48, 3.85**	*I feel a bond with the other members of my network*	4	4
	I am proud to be a member of my network	3 and 4	3
	I have a feeling of togetherness or closeness in my network	4	4
	I have a strong positive feeling toward my network	4	4

The results show a mean social identity level of 3.67 with a standard deviation of 1.02. This means members have a positive social identity with their female SMME network. These scores show a slightly lower level of social identity than trust (M=3.67 for social identity versus M=3,82 for trust), with more variability in respondents answers (SD=1.02 versus SD=0.83), when considering both as enablers in the relational dimension of social capital. Skewness measured at -.63 as more members agree or strongly agree with the items making up the scale. Three items measured a 4 out of 5 for mode and median, also indicating that most respondents agreed with the statements relating to a high social identity with their network.

Table 4.14 below details the findings per item by frequency of responses.

Table 4-13 Social Identity Detailed Breakdown

Social Identity	Strongly disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Strongly agree (5)
I feel a bond with the other members of my network M=3.82, SD=1.01	5	5	27	49	31
	4.3%	4.3%	23.1%	41.9%	26.5%
I am proud to be a member of my network M=3.42, SD=1.24	10	16	35	27	29
	8.5%	13.7%	29.9%	23.1%	24.8%
I have a feeling of togetherness or closeness in my network M=3.88, 1.14	6	5	32	28	46
	5.1%	4.3%	27.4%	23.9%	39.3%
I have a strong positive feeling toward my network M=3.55, SD=1.17	7	15	31	35	29
	6.0%	12.8%	26.5%	29.9%	24.8%

The table shows that the bond felt by members with each other was particularly highly rated, with 68.4% agreeing or strongly agreeing that they feel a bond with other members of their network. The item *I have a feeling of togetherness or closeness in my network* scored highest in the strongly agree category with 39.3%. There means for each item varied between 3.42 and 3.88. Very few responses were in the disagree or strongly disagree categories. This can be seen in Figure 4.8.

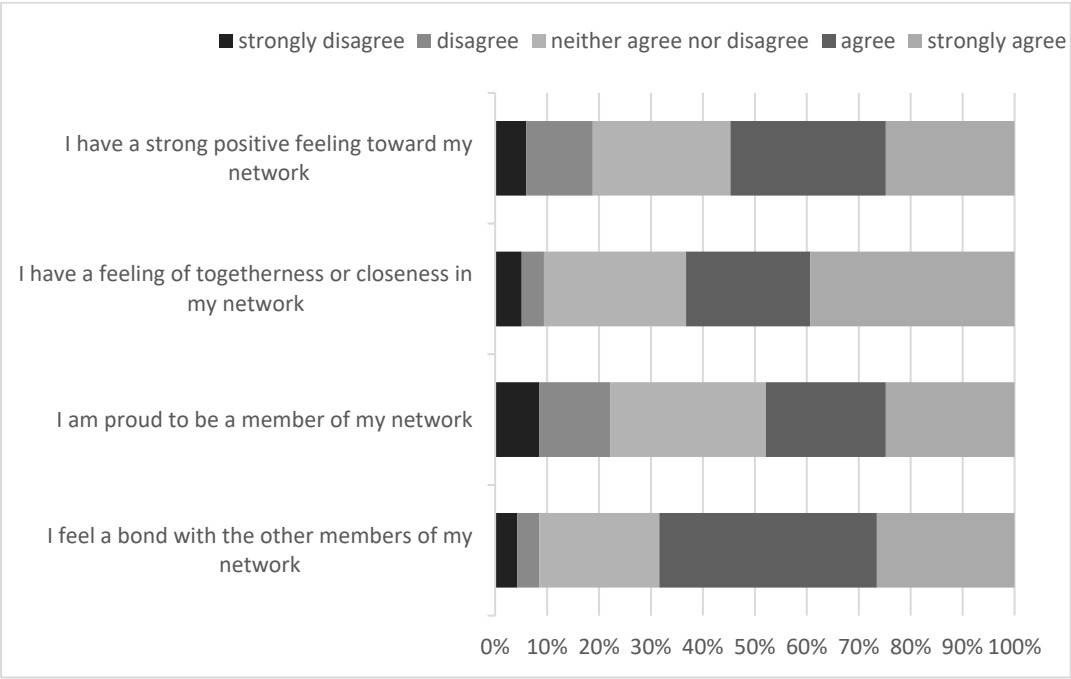

Figure 4-8 Social Identity Graph

In order to test whether there is a relationship between social identity and KSB, a correlation analysis was performed. The scatter plot in Figure 4.9 shows a positive linear relationship and shows a cigar shape indicating assumptions of linearity and homoscedasticity are not violated (Pallant, 2007, p. 124).

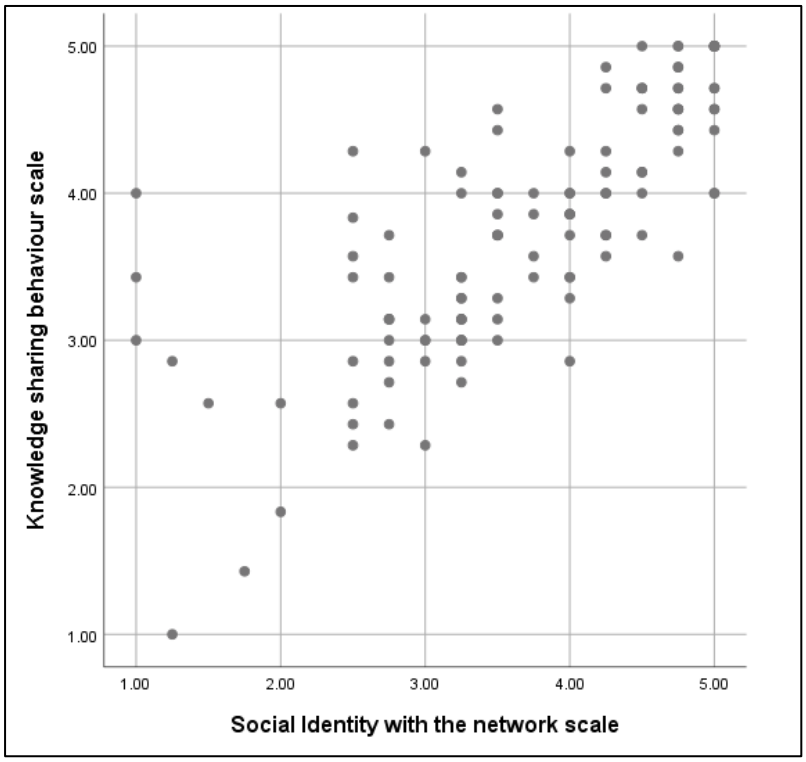

Figure 4-9 Social Identity - KSB Scatter Plot

After running a Pearson's correlation coefficient between the Social Identity scale and the Knowledge Sharing Behaviour scale, a positive correlation was found r = 0.77, n=117 p < .01. This implies that the higher the member's social identity with the network, the higher their knowledge sharing behaviour is likely to be. The model summary in Table 4.15 below shows a $r^2 = 0.586$ meaning that 58,6% of variability on KSB can be accounted for by member's social identity with the network.

Table 4-14 Social Identity - KSB Correlation

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.768[a]	.590	.586	.53724

a. Predictors: (Constant), Social Identity with the network scale

b. Dependent Variable: Knowledge sharing behaviour scale

In summary, the null hypothesis was rejected as the KSB was found to be related to social identity. The level of member's social identity with their network (M=3.67, SD=1.02) is significantly correlated (r=0.77) with KSB (M=3.75, SD=0.84).

Social media usage (Hypothesis 3)

Since all networks used social media, in particular Facebook, as a method of communicating with members and for members to share knowledge, this enabler was selected for the structural dimension of social capital. A previously validated scale called social media integration, made up of four items, was used to measure this construct. The inter-item reliability was tested and found to be 0.77, which is similar to that of the scale developed by Maree (2017, p. 970).

The measures of centrality, mode and median, for each item making up the scale are shown in Table 4.16 below.

Table 4-15 Social Media Usage Summary

Social media usage			
	Items	Mode: (1=Highly disagree range to 5 = highly agree)	Median (1=Highly disagree range to 5 = highly agree)
Social media scale M=3.82 SD=.83 **95% CI:** **3.1, 3.51**	*I enjoy checking my network's Facebook account*	5	4
	Using Facebook is part of my everyday routine	4	3
	I would be disappointed if I could not use Facebook at all	5	4
	I respond to content that my network and others share using Facebook	5	3

Of the Likert items corresponding to social media usage, the item most respondents agreed or strongly agreed with was *I enjoy checking my network's Facebook account* at 59,9%. Although the modes for the items scored highly on the scale of 1-5, the medians were lower.

Overall, the members general use of Facebook can be determined from two of the items. Less than half (44.5%) of respondents agree or strongly agreed with the statement *Using Facebook is part of my everyday routine* while 52.2% agree or strongly disagreed that they would be disappointed if they could not use Facebook at all.

Table 4-16 Social Media Usage Detailed Breakdown

Social Media Usage	Strongly disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Strongly agree (5)
I enjoy checking my network's Facebook account M=3.73, SD=1.18	8	7	32	32	38
	6.8%	6.0%	27.4%	27.4%	32.5%
Using Facebook is part of my everyday routine M=3.11, 1.44	25	14	26	27	25
	21.4%	12.0%	22.2%	23.1%	21.4%
I would be disappointed if I could not use Facebook at all M=3.43, SD=1.52	18	20	18	16	45
	15.4%	17.1%	15.4%	13.7%	38.5%
I respond to content that my network and others share using Facebook M=2.96, SD=1.6	32	21	18	12	34
	27.4%	17.9%	15.4%	10.3%	29.1%

There was high variability with the item *I respond to content my network and others share using Facebook* with 29,1% strongly agreeing and 27,4% strongly disagreeing. When combining the scores, overall for this item, more respondents disagreed or highly disagreed (45.3%) compared to 39,4% who agreed or highly agreed. The mean for this item was only 2.96 (SD=1.6). The remaining items had a higher frequency of positive responses, as can be seen in Figure 4.10 below. Overall, the scores are generally neutral.

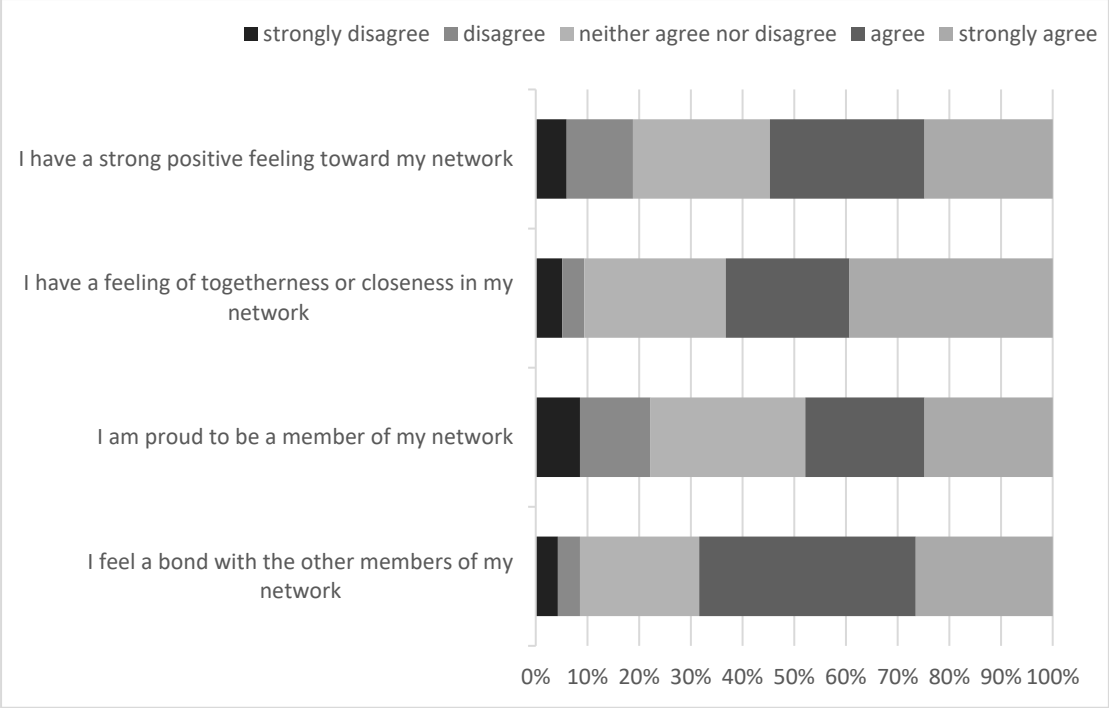

Figure 4-10 Social Media Usage Graph

Pearson's correlation coefficient was calculated to determine the direction and strength of the relationship between social media usage and KSB. First, assumptions of normally, linearity and homoscedascity were tested, visually confirmed in the scatter plot in Figure 4.11 below.

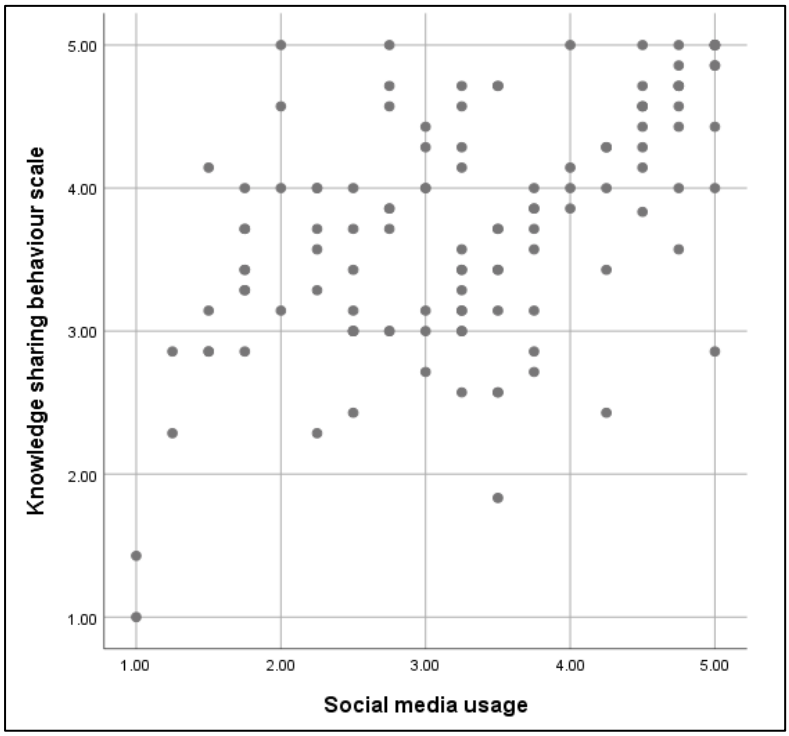

Figure 4-11 Social Media Usage - KSB Scatter Plot

The scatter plot identifies a positive relationship however, as confirmed by the Pearson's product moment coefficient, the strength of the relationship was not strong. A moderate positive relationship was found with r =0.53, n=117 and p = .01. In terms of the coefficient of determination, r^2 = 0.285 implies that 28,5% of variability on KSB can be accounted for by member's social media usage (Table 4.18).

Table 4-17 Social Media Usage - KSB Correlation

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.534[a]	.285	.279	.70931

a. Predictors: (Constant), Social media usage

In summary, there was significant evidence to reject the null hypothesis and accept the alternate hypothesis that social media (M=3.31, SD=1.11) is related to KSB (M=3.75 SD=0.84), although the strength of the relationship is only moderate (r= 0.53).

Shared goals (Hypothesis 4)

There were three items in the questionnaire that measured the construct Shared Goals, the last of the KSB enablers. Shared goals fall under the cognitive dimension of social capital. The items were all measured using a Likert scale where 1 indicated a low level of shared goals among network members and 5 indicated a high level of shared goals. The summated scale was tested previously by Chiu et al. (2006, p. 1880) to show an inter-item reliability of 0.88. However, the Cronbach's alpha for this sample was calculated at 0.64 (seen in Table 4.19), which is below the recommend level of 0.7.

Table 4-18 Shared Goals Scale

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Members of my network share the goal of helping others solve their professional problems	7.21	4.426	.235	.064	.884
Members of my network share the same goal of learning from each other	6.95	4.067	.561	.632	.386
Members of my network share the same value that helping others is pleasant	6.71	4.174	.633	.641	.320

As depicted in Table 4.19 above, deleting the item *Members of my network share the goal of helping others solve their professional problems* would increase the Cronbach's alpha to 0.88. However, deleting this item could remove some potentially useful information, as to why members have scored this differently to the other two items. The low alpha could be attributed to the low number of items that make up this scale (3), where the less the number of items in the scale, the lower the inter-item reliability score is likely to be. In addition, this scale has been tested by numerous other studies with the alpha scores above acceptable limits (Aslam et al., 2013, p. 35; Chiu et al., 2006, p. 1880; Darvish & Nikbakhsh, 2010, p. 38). For these reasons it was decided to leave the scale as originally constructed

Table 4.20 below shows the measure of centrality for the items in the Shared Goals scale:

Table 4-19 Shared Goals Summary

Shared goals			
	Items	Mode: (1=Highly disagree range to 5 = highly agree)	Median (1=Highly disagree range to 5 = highly agree)
Shared goals scale M=3.82 SD=.83 95% CI = 3.31, 3.65	*Members of my network share the goal of helping others solve their professional problems*	5	3
	Members of my network share the same goal of learning from each other	4	4
	Members of my network share the same value that helping others is pleasant	4	4

Although the mode for the first item in Table 4.20 was *highly agree*, the median was neutral. This is the same item that brought the Cronbach alpha measure down for the scale. The other items were on the *agree* level for mode and median.

Individual item analysis (Table 4.21) is particularly important in this case given the lower reliability of the overall shared goals scale.

Table 4-20 Shared Goals Detailed Breakdown

Shared Goals Scale	Strongly disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Strongly agree (5)
Members of my network share the goal of helping others solve their professional problems M=3.23, SD=1.46	19 16.2%	24 20.5%	18 15.4%	23 19.7%	33 28.2%
Members of my network share the same goal of learning from each other M=3.48, SD=1.16	9 7.7%	14 12.0%	28 23.9%	44 37.6%	22 18.8%
Members of my network share the same value that helping others is pleasant M=3.72, SD=1.06	7 6.0%	5 4.3%	28 24.1%	49 42.2%	27 23.3%

Of the three items in Table 4.21 above, the one that respondents most agreed or strongly agreed with was *Members of my network share the same value that helping others is pleasant* (65.5%), with only 10,3% disagreeing or strongly disagreeing. Less than half the respondents agreed or strongly agreed that *members of their network shared the goal of helping others solve their professional problems* (47,9%), with a large percentage (36,7%) disagreeing or strongly disagreeing. This dichotomy is further evidenced with the highest standard deviation of the item (M=3.23, SD=1.46) and can be seen in Figure 4.12 below. This implies that members enjoy helping and learning from each other but are not as confident they all share the goal of helping solve professional problems.

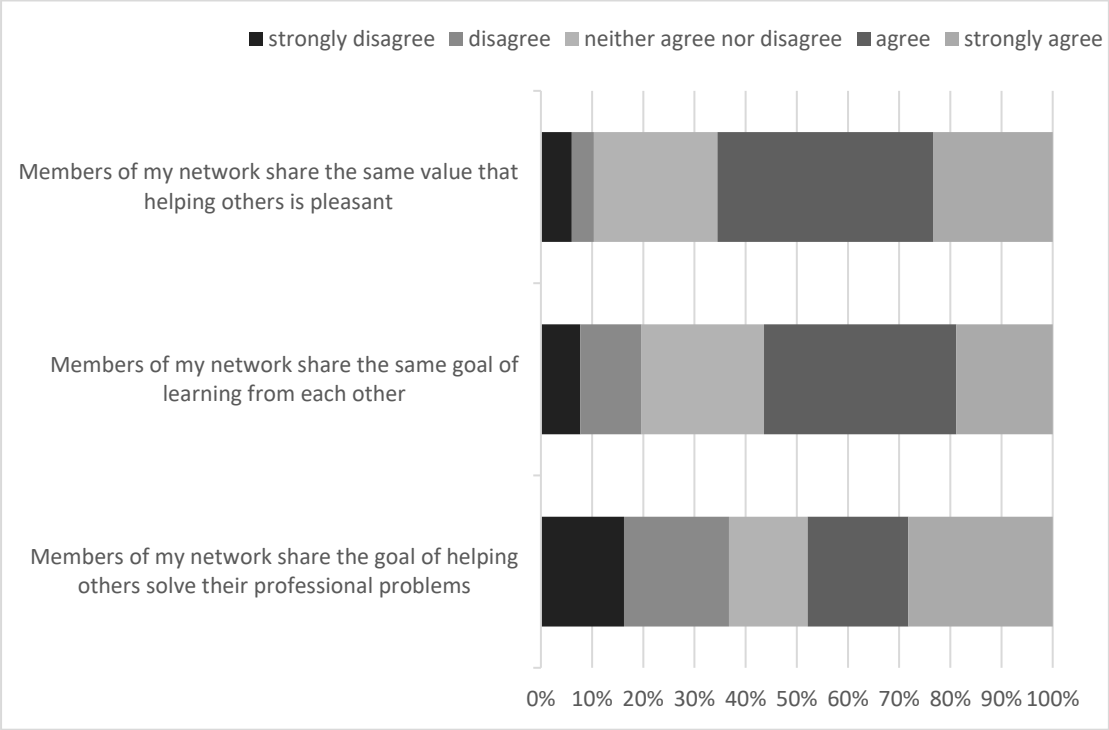

Figure 4-12 Shared Goals Graph

To test the hypothesis that the more network members share goals, the higher their knowledge sharing behaviour, a Pearson's correlation coefficient was calculated to identify the relationship between the shared goals scale and the KSB scale. A strong positive relationship was found: r = 0.73, n=117, p = .01. This was after the required assumptions were tested and was confirmed by the scatter plot in Figure 4.13.

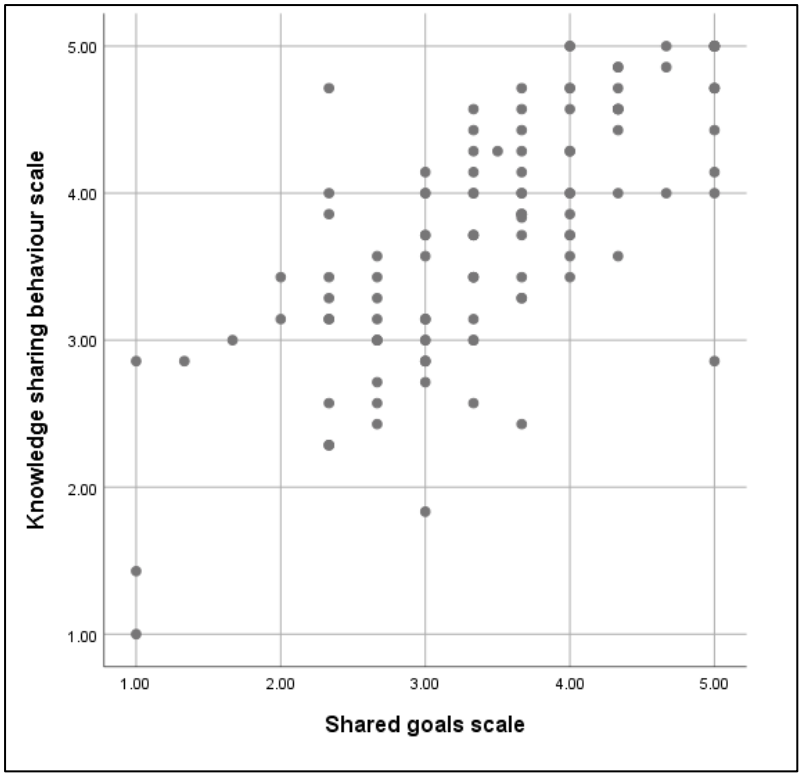

Figure 4-13 Shared Goals - KSB Scatter Plot

Table 4-21 Shared Goals - KSB Correlation

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.728[a]	.529	.525	.57559

a. Predictors: (Constant), Shared goals scale

In summary, there was significant evidence to reject the null hypothesis and conclude that the shared goals variable (M=3.82, SD=0.83) is strongly related (r=0.73) to KSB (M=3.75 SD=0.84).

4.3.3. Social capital as a single aggregated predictor of KSB

Given that the four enabler variables measured above are all components of social capital, it is reasonable to expect a degree of interdependence between the variables, particularly between the related variables of trust and social identity (forming the relational dimension of social capital) and shared goals. Since a multiple regression would therefore show a degree of collinearity, a

summated scale for social capital was created using all four enablers (Table 4.23).

Table 4-22 Social Capital Scale

	Mean	Std. Deviation
Trust in the network scale	3.3291	1.05078
Social Identity with the network scale	3.6667	1.02343
Social media usage	3.3056	1.10646
Shared goals scale	3.4772	.94101
Social capital scale	3.4446	.89366

The table above shows the mean and standard deviation for the new summated scale to be 3.44 and 0.89 respectively. This indicates a positive average score for members' social capital.

Reliability was tested using Cronbach Alpha scoring .89, which shows a high level of inter-item reliability.

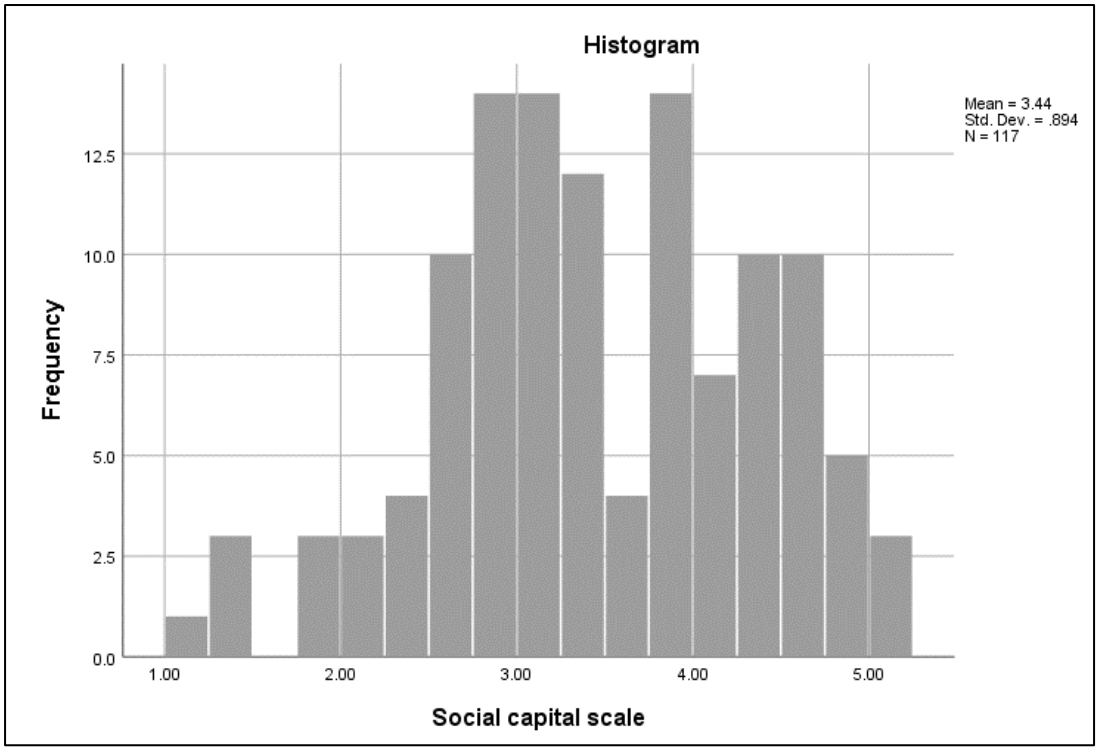

Figure 4-14 Social Capital Histogram

A Pearson correlation determined a significantly positive strong relationship between Social Capital and KSB of 0.79. The adjusted r^2 = 0.614 means that 61.4% of the KSB can be attributed to members' social capital score, with that score being composed of the 4 sub-scales of trust, social identity, shared goals and social media usage.

Table 4-23 Social Capital Correlation

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.786[a]	.617	.614	.51892	.617	185.619	1	115	.000

a. Predictors: (Constant), Social capital scale

b. Dependent Variable: Knowledge sharing behaviour scale

A simple linear regression was then calculated to determine the predictive value of social capital as whole, on KSB. The results were as follows: A significant regression equation was found (F (1,116) =185.62, p= .001), with an r^2 of 0.62. The regression equation result was as follows: Participants predicted KSB score is equal to 1.22 + 74(social capital score), where 5 is the highest social capital score and 1 is the lowest. This means that participants mean KSB score increased by .74 for each unit increase in social capital.

The final set of results for the study follow, which relate to the final objective.

4.3.4. The effect of demographic (age and education) and business related (length in business, type of industry, number of employees) factors on knowledge sharing behaviour

The sample profile in the first section of this chapter provided descriptive statistics for the respondents' ages, education, business experience, sector and number of employees. This section considers the relationship between these factors and KSB to test if there is a significant effect. Non-significant data tables can be found in Appendix D.

A one way between groups Anova test was performed to determine if KSB was different depending on the number of years the network members had been in

business. Both variables were continuous. No statistically significant result was found (see Appendix D). A series of Kruskal-Wallis H tests showed that there were no statistically significant differences in KSB based on the age group or education level of the members. Further, the business sector the members' business operating in and the number of employees had no significant effect on KSB according to the Kruskal Wallis test results. These anaylses are shown in Appendix D.

None of the results showed a significance level less than 0,05, meaning no significant difference was found between the groups for any of the independent variables. This means no difference in KSB was found based on members' age group, level of education, number of employees, years of business experience or business sector.

Further analysis was conducted to determine if there was a correlation between any of these factors and KSB. No significant relationship was found between KSB and Years of business experience ($r = 0.131$) or years of membership in the network ($r = 0.14$). Further, Spearman's correlational analysis showed there was no relationship between KSB and number of employees ($r_s = -0.107$). or education level ($r_s = -0.093$) or age group ($r_s = 0.01$) or business sector ($r_s = .089$).

4.4. Conclusion

This chapter reported results, summary descriptive statistics and inferential statistics in accordance with the research objectives. The next chapter will examine the details and relationships between the findings, with further interpretation and discussion.

Chapter 5. DISCUSSION

5.1. Introduction

Knowledge sharing between members of female business networks would appear to be mutually beneficial for all members, however, based on the results section this does not always seem to be the case. In this chapter, the results are discussed and interpreted in the context of previous research, as per the literature review chapter. Results that confirm and differ from the literature are discussed.

First a general, overall summary of the findings are presented, followed by a more detailed analysis of the findings in line with the research questions. Where the analysis corroborated previous research, the nuances related to knowledge sharing particularly relating to female business networks are reflected upon, and where contrary findings are established, possible reasons for this, based on further analysis of the literature, are be presented. The chapter concludes with the gap the study fills in the literature, linking to the final chapter – Conclusions.

5.2. Summary of Findings

The study sought to examine the extent and nature of knowledge sharing in female SMME networks. The aim was to determine the extent to which factors in social capital served as knowledge sharing enablers in female SMME networks. Specifically, the factors of trust and social identity, as part of the relational dimension of social capital, shared goals as part of the cognitive dimension and social media usage as part of the structural element were examined. Finally, demographic factors (age, education) and business-specific factors (business sector, number of employees, years in business) were explored to determine their relationship with knowledge sharing behaviour among the members of the networks.

The findings of this study indicate that members of the SMME networks share more tacit knowledge (M=3.88, SD=0.99) than explicit knowledge (M=3.20,

SD=0.98) and overall, they are more inclined to share knowledge (M=3.59, SD=0.89) than not. Members knowledge sharing behaviour was found to be positive (M=3.75, SD=0.835), both in donating (M=3.82, SD=0.83) and receiving of knowledge (M=3.7, SD=0.89) with more members indicating positive knowledge donating behaviour. Trust among members and in their network was relatively high (M=3.82, SD=0.83), and a strong relationship was found between the level of trust and KSB (r = 0.71, n=116, p <.01). Further, the level of trust was found to be a good predictor of KSB (r^2=0.506). Social identity, along with trust, make up the relational element of social capital. Results revealed members have a relatively high degree of social identity with their network (M=3.67, SD=1.02). Further, social identity was found to have the highest positive relationship with KSB (r =0.77, n=117 p < .01) and social identity was found to predict a higher level of KSB among members (r^2 = 0.586). Although results showed a high level of social media usage (M=3.82, SD=.83), this had the lowest correlation with KSB (r =0.53, n=117 and p = .01) out of the four predictor knowledge sharing enablers, although it was still significant. It had the lowest predictive value in KSB among network members (r^2 = 0.285). The final knowledge enabler tested was shared goals. This scale had a lower inter-item reliability and the results show that members of the SMME networks had a neutral score for shared goals (M=3.23, SD=1.46). The extent of goal sharing was positively related to KSB (r =.73, n=117, p = .01), and served as a predictor of KSB among members (r^2=.529). Figure 5.1 below shows the correlations between the knowledge enablers and KSB, referencing Pearson's correlation coefficient.

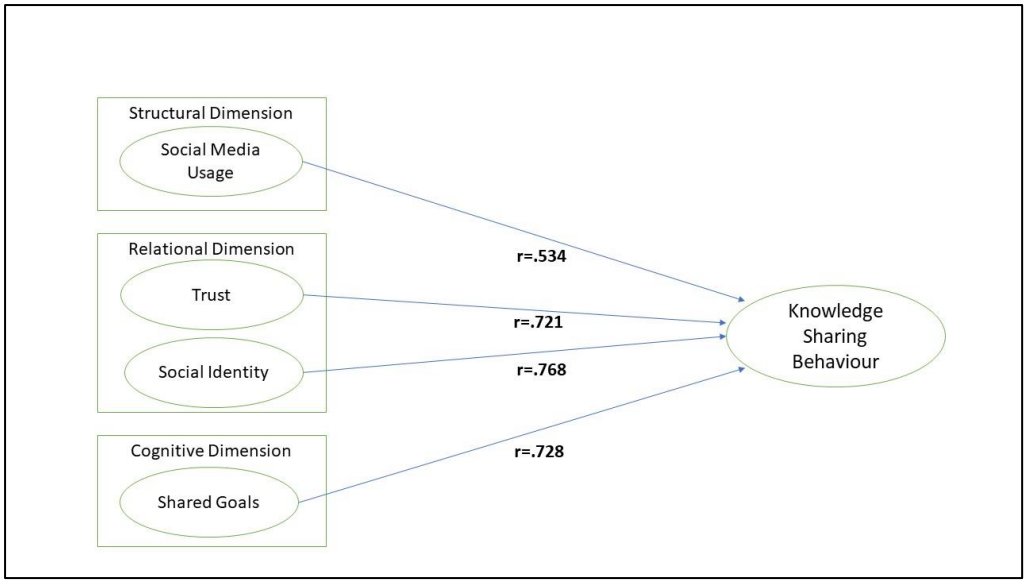

Figure 5-1 Knowledge Sharing enablers correlation with KSB

The final set of results investigated demographic and business-related factors to determine their influence on KSB and found no significant relationships. Analysis and critical interpretation of each objective of this research follows.

5.3. The extent and nature of knowledge sharing behaviour in female SMME networks

5.3.1. Extent of knowledge sharing behaviour

The knowledge sharing behaviour scale was shown to be reliable, consistent with the scale developed by Van den Hooff, which was made up of knowledge donating and knowledge collecting behaviour (Van den Hooff & De Ridder, 2004, p. 118). Knowledge sharing behaviour was found to be positive among network members, in both knowledge donating (M=3.82, SD = 0.83) and knowledge collecting (M=3.7, SD= 0.89) behaviours. The reasons for high knowledge collecting behaviour is self-evident, as the knowledge collector is the party gaining from the transfer for of knowledge. More interesting is that knowledge donating behaviour actually scored higher than knowledge collecting behaviour. This study did not seek to understand members motivation for sharing knowledge, however the fact that they do could be to enhance their professional reputations, and because they enjoy helping others, as found in a previous study by Wasko and Faraj (2005, p. 50). The fact that age, years of

business experience and education level did not influence the knowledge sharing behaviour, means that the mere fact of being a female owner of a small business was enough for members to help each other in terms of sharing knowledge. This corresponds with the social identity knowledge enabler.

5.3.2. Nature of knowledge sharing

The nature of knowledge was analysed based on Nonaka's widely used model of explicit and tacit knowledge (Nonaka & von Krogh, 2009). The tacit and explicit knowledge sub-scales were found to be reliable in accordance with Lee's (2001, p. 333) original development of the scales.

Members of the female SMME networks tend to share more tacit knowledge (M=3.88, SD=0.98) than explicit knowledge (M=3.2, SD=0.99). Results reflect the lowest level of sharing being of tangible plans and proposals (M=2.53 SD=1.25). The highest item of explicit sharing was of business successes and failures (M=4.1 SD=.0.98), which is the one item making up the explicit scale that could be considered a tacit item, or more on the intangible side of knowledge sharing. If this item were included in the tacit scale, it is surmised that there would be an even higher difference between the extent of tacit knowledge sharing over explicit sharing. This aligns with the finding that the majority of members' (52,5%) reason for joining their network was for advice, mentoring and knowledge purposes. It also aligns with literature, where SMEs were found to have a lack of repositories of explicit knowledge (Evangelista et al., 2010, p. 36). Previous research also suggests that female networks tend to share more tacit knowledge (Durbin, 2011, p. 98). However, the findings are contrary to that found by Lee (2001, p. 332) whose scale was used in this study. Lee found that explicit knowledge was easier to share in inter-organisational networks, because it is easier to transfer. This difference can be attributed to the types of business Lee was testing for inter-organisational knowledge sharing, where he sampled businesses involved in formal service agreements, for outsourcing purposes. It makes sense that explicit knowledge sharing is more prevalent in this type of relationship, compared to more informal, voluntary relations formed between members of female SMME networks.

On the whole, when combining tacit and explicit knowledge sharing, results show members are inclined to share knowledge with other members of their network (M=3.59, SD=0.89). Knowledge sharing was found to be relatively evenly distributed across age groups and education levels. The implications of this are that knowledge sharing behaviour is prevalent in female SMME networks, regardless of the demographic composition of the network, which is a positive sign for the creation and promotion of any type of female business network.

5.4. The extent to which trust as a dimension of relational capital enables knowledge sharing behaviour in female SMME networks

A high level of trust (M=3.82, SD=0.83). among members of the female SMME networks was evidenced. A significant, strong positive relationship was found between trust and KSB ($r = 0.71$, $n=116$, $p < .01$). Further, the higher the level of trust, the more the members were likely to share knowledge with other members of their network. The item that scored the highest was related to the faith members had in the skills of the other female entrepreneurs who were members of their network (M=3.82, SD=1.01). This is a measure of competency-based trust and supports the finding by Levin and Cross (2004, p. 22) that competence-based trust is especially important for tacit knowledge sharing. Although no other studies specifically considered female SMME networks, there were numerous studies of other populations that found a positive relationship between trust and KSB (Abrams et al., 2003; Bautista & Bayang, 2015; Levin & Cross, 2004; Tsai & Ghoshal, 1998; Usoro et al., 2007). Considering this study is concerned with inter-organisational knowledge sharing between SMMEs, it confirms findings of Chen et al. (2014, p. 93) who concluded that trust is more important for inter-organisational knowledge sharing than shared vision.

Not all studies found a such a strong positive relationship however. Rhodes et al. (2008, p. 96) found that a trust culture was the least important of the factors they considered in promoting knowledge sharing, nevertheless a positive

relationship was still found; they also found that tacit knowledge was shared more.

Some studies found no relationship between trust and KSB, contrary to expectations. One such result was reported by Wasko and Faraj (2005, p. 51), who found that relational capital did not contribute to KSB, in particular knowledge donating behaviour. This was attributed to the virtual nature of the community being studied. This may be applicable when the relationship between social media usage and KSB is discussed further in this chapter, as social media usage points to the virtual elements of female entrepreneurial networks. Another study that had contradictory findings to this research was by Chow and Chan (2008, p. 464). They found no significant relationship between social trust and organisational knowledge sharing in their study into social capital influence on knowledge sharing. Their other findings will be discussed further in this discussion when considering the other knowledge enablers of social capital. A possible reason for the difference in their finding to this and other research is their indirect model used, which was based on the theory of reasoned action. This study considered knowledge sharing attitude and the intention to share knowledge, rather than KSB directly. Their research was also on internal knowledge sharing among managers where trust may be less important or prevalent than one would expect in an informal inter-organisational network such as female SMME networks.

5.5. The extent to which shared social identity as a dimension of relational capital enables knowledge sharing behaviour in female SMME networks.

Like trust, social identity also forms part of the relational dimension of social capital. The respondents showed a high social identity with their network (M=3.67, SD=1.02). All items measuring social identity scored highly (median = 4 out of 5) except for pride in their network (median = 3). This is something the network organisers could work on. A strong positive relationship between the female SMME network members' social identity with the network and their knowledge sharing behaviour was found ($r = 0.77$, $n=117$ $p < .01$). A strong social identity with the network was found to be a good predictor of KSB ($r^2 =$

0.586). This confirms previous studies, although these studies were not looking at KSB in female SMME networks. Chiu et al. (2006, p. 1883), whose scale for social identity was used in this study to measure the construct, found that social identification increased the quantity of knowledge sharing, although not the quality. The study was only on virtual communities – the dynamics of inter-organisational KSB in a virtual community is likely to be different to female SMME networks, who are geographically less dispersed and whose social identity with the network is likely to be stronger with face to face contact. Chiu et al. (2006, p. 1883) also found that social identification has indirect effects on knowledge quality via trust. This implies a relationship between social identity and trust, as both are indicators of the relational dimension of social capital. This study into female SMME networks did not consider the quantity versus quality of KSB. Interestingly, a study by Darvish and Nikbakhsh (2010, p. 41) also showed that social identification did not improve the quality of the knowledge sharing. Further, they also found no association between social identity and attitude and expectations of knowledge sharing (Darvish & Nikbakhsh, 2010, p. 41). A significant positive relationship between social ties and knowledge sharing intention was found by Chen et al. (2009, p. 143) in a virtual learning community. Again, this study was only in a virtual community and also did not consider a direct relationship to KSB, but rather via the intervening variable of knowledge sharing intention. This implies that there are various nuances when it comes to the relationship between social identity and KSB. Given that an aspect of social identity is based on gender by itself (Durbin, 2011, p. 94), this could explain why the measure of social identity scored highly. Social identity is clearly a significant part of the success of female networks in terms of KSB.

5.6. The extent to which use of the SMME network's social media as a dimension of structural capital enables knowledge sharing behaviour in female SMME networks.

Given that the female SMME networks in this study all had a social media presence, and the prevalence of research into knowledge sharing in virtual

communities, the expectation of this study was to find a strong relationship between social media usage and knowledge sharing behaviour by the network members. Although a significant positive relationship was found (r =0.53, n=117 and p = .01), it was only moderate in strength. Of all the knowledge sharing enablers, social media usage was found to the weakest predictor of KSB (r^2 = 0.285). The items measuring social media usage also demonstrated high standard deviations, indicating a high variety of responses. A possible explanation for this is the relatively older age of the members, with 70% being over the age of 40. Young people are known to have a higher social media usage (Shanmuga & Sakthi, 2015, p. 158). The results show that, although members enjoy checking their network's Facebook account (M=3.73, SD=1.18), they are less likely to respond to content posted there (M=2.96, SD=1.6). This demonstrates a lack of knowledge sharing over social media and shows that along with a prevalence of tacit knowledge sharing, members of the female SMME networks share much of their knowledge in the real world, as opposed to online. The positive relationship still shows that social media does play a role in knowledge sharing however. This is congruent with previous research. A similar but slightly stronger relationship was found between social networks and knowledge sharing attitude and intention in a study by Bautista and Bayang (2015, p. 666). A study by Cao et al. (2015, p. 359) investigated the relationship between social media and knowledge integration. Instead of viewing social media as one of the dimensions of social capital, this determined that social media is a facilitator of social capital, specifically in the trust and shared language aspects, which form part of the relational and cognitive dimensions respectively. Similar research by Ellison, Steinfield, and Lampe (2007, p. 1161) found that Facebook usage was positively related to social capital. This is a different perspective that could provide more avenues for research, specifically into social media being a mediator in the relationship between social capital and KSB. Chow and Chan (2008, p. 463) also found a significant positive relationship between social networks and knowledge sharing intention using structural equation modelling, so the strength of the relationship cannot be compared to this study, however their findings are consistent with this study. Aslam et al. (2013, p. 38) also found little relationship

between the structural dimension of social capital and knowledge sharing, although they used a different scale.

5.7. The extent to which shared goals of SMME network members as a dimension of cognitive capital enables knowledge sharing behaviour in female SMME networks

A significant, strong positive relationship was found between the shared goals and the KSB of members of female SMME networks (r =0.73, n=117, p = .01). Shared goals represent the cognitive dimension of social capital in this study. This scale had a low inter-item reliability, therefore the results are discussed here but are not as valid as the other knowledge enablers. It would be expected that members of the female SMME would have similar goals, that is, to grow their businesses, but the extent to which shared goals contributed to KSB of the members was unknown. The item measuring shared goals that scored the highest concerned members sharing the value that helping other is pleasant (M=3.72, SD=1.06). This is congruent with the previous finding in this study where members scored highly in knowledge donating behaviour.

The results confirm the hypothesis that the more members share goals, the higher their KSB. This element of social capital has been positively associated with KSB in multiple studies (Bautista & Bayang, 2015; Chiu et al., 2006; Chow & Chan, 2008; Darvish & Nikbakhsh, 2010; Lefebvre et al., 2016). Li (2005, p. 91) found that shared goals are more important in predicting KSM inside an organisation, with trust being a better predictor of inter-organisational knowledge sharing, such as between members of female SMME networks. This study was conducted among subsidiary firms in China, so the context is different to this study, which found a positive relationship inter-organisationally. In research into knowledge sharing attitude and intention by Bautista and Bayang (2015, p. 666), in addition to the positive relationship with trust, a significant positive relationship was found with shared goals, although the strength of the relationship was slightly lower than this study into female SMME networks. Contrary to this research, Chiu et al. (2006, p. 1884) found a strong negative relationship between shared vision and the quantity of knowledge

shared. Their study also had a contradictory finding with trust and KSB, therefore it could be the nature of their research into virtual communities, and looking at the quality and quantity of knowledge sharing, which resulted in these findings. They did recommend further research into KSB and shared goals (Chiu et al., 2006, p. 1884).

Therefore, all four of the social capital-based knowledge sharing enablers were found to have a positive relationship with KSB in female SMME networks, with social media usage being the only variable to have a moderate strength in the relationship, while the others had a strong relationship. All variables were found to have predictive value in KSB. However, given that the variables are all part of social capital, there is an expected degree of relationship between the variables. For this reason, an analysis of the social capital as a single scale made up of the four variables as subscales was also conducted. This result showed a significant strong positive relationship and further showed that social capital accounts for over 60% of the variance in KSB. This confirms results of previous studies, although not all used the same variables to measure social capital (Inkpen & Tsang, 2005; Lefebvre et al., 2016; Tsai & Ghoshal, 1998). This is useful to confirm the validity of the study, however the individual analysis of the knowledge sharing enablers is a more useful perspective in providing details on KSB enablers.

5.8. The effect of demographic (age and education) and business related (length in business, type of industry, number of employees) factors on knowledge sharing behaviour.

Interestingly, no significant relationship was found between any of these factors and knowledge sharing behaviour (see Appendix D). This implies that irrespective of factors such as age, business experience and business types, KSB does not differ. Further, the specific network, years of membership and business type did not result in any difference in KSB among members. It therefore seems that it is the network itself which creates the conditions for knowledge sharing, by stimulating and supporting the four dimensions of social capital, rather than the individual characteristics of the entrepreneur or their

business. Thus, trust, social identity and shared goals, and to a lesser degree social media usage, are related to KSB.

5.9. Conclusion

The results of this study confirm the hypotheses in the conceptual model: The more trust a member has in their network, the greater their extent of KSB. The more they identify with their network, the more they are likely to share knowledge. The greater the members' use of social media, the more likely they are to display KSB. However, this is not as important as expected, which is useful for the organisers of the networks who may be concentrating too much on the social media aspects of their networks. The more the network members share goals with other members of their network, the greater the extent of their KSB. In terms of the type of knowledge shared, both explicit and tacit knowledge is shared, although tacit knowledge sharing is favoured more. KSB is displayed by the members of the networks, particularly knowledge donating behaviour. The research confirms literature on the link between social media and KSB and extends the strength of the relationships particularly in the relational element of social capital. It contributes to the study of social capital in inter-organisational networks by specifically looking at KSB in female SMME networks. The study suggests that KSB is especially prevalent in female SMME networks. This study provides more insight into the nature of knowledge sharing in networks from a gender perspective, which was previously lacking (Durbin, 2011, p. 110). Limitations, recommendations and conclusions follow in the next chapter.

Chapter 6. CONCLUSIONS AND RECOMMENDATIONS

6.1. Introduction

The purpose of this chapter is to highlight key points from the previous discussion of the findings and present the meaning of the results as they relate to each of the six objectives for the research. Conclusions from each research objective are drawn, along with the limitations and recommendations related to each objective. This is followed by overall conclusions, limitations and recommendations for future research. Final conclusions, including contributions of the research, complete the chapter.

6.2. Discussion of Research Objectives and Conclusions

The purpose of this research was to better understand knowledge sharing behaviour in female SMME networks in a South Africa context. The specific objectives and the conclusions for each follow:

6.2.1. To determine the extent and nature of knowledge sharing behaviour (KSB) in female SMME networks

There are two components to this objective:

The extent of KSB was measured by seven questions comprising a previously validated KSB scale. Given that knowledge sharing implies a two-way process of giving (donating) knowledge and receiving (collecting) knowledge, KSB was divided into knowledge donating and knowledge collecting behaviour. Female members of the SMME networks sampled demonstrated a high level of KSB (M=3.75, SD=0.835), both donating and collecting. Therefore, the extent of KSB in female SMME networks is high. Previous studies have established the link between KSB and SMME business performance (Cao et al., 2015, p. 352; Easterby-Smith & Tsang, 2008, p. 677; Lefebvre et al., 2016, p. 570; Mc Manus et al., 2016, p. 588; Tohidinia & Mosakhani, 2010, p. 611; van Wijk et al., 2008, p. 5) therefore this finding is of use to SMME development agencies and

government policy in general. Support for female SMME networks would contribute to government's larger goal of facilitating female entrepreneurship in South Africa.

The nature of knowledge was conceptualised as being explicit or tacit and these were measured in a series of four and three questions respectively. Analysing the nature of knowledge along tacit/explicit lines has been recognised and recommended to improve insight into knowledge sharing (Hau et al., 2013, p. 363). The members of the female SMME networks demonstrated a high level of both types of knowledge sharing, with tacit knowledge (M=3.88, SD=0.99) being shared more than explicit knowledge (M=3.20, SD=0.98). Moreover, the aspects of explicit knowledge that would also be shared through socialisation, scored highly too. Sharing of successes and failures, know-how and expertise gained from training and education scored the highest. Therefore, KSB in female SMMEs tends to be expressed through socialisation and sharing of soft skills and advice rather than of documents, models and reports. Networks encourage socialisation. Socialisation from theory implies sharing of tacit knowledge (Nonaka & Konno, 1998, p. 43). Although very little previous research into female SMME networks and the nature of knowledge sharing, particularly in a South Africa context, has been undertaken, there is evidence that female business networks focus on quality of relationships (Upton et al., 2014, p. 34) and that gender identity is important. Kock (2008, p. 51) found that one of the ways female entrepreneurs in South Africa measure success is in terms of their inter-personal relationships and that they emphasise social value. This could explain the high level of tacit knowledge sharing evidenced in this research.

It is useful to understand the nature of knowledge sharing behaviour so that organisers of the female SMME networks can focus their efforts on activities that promote socialisation and tacit knowledge sharing. Since socialisation is foundational in networking, if government policy is to promote female entrepreneurship, and KSB is known to improve business performance, this finding also supports the value in increased government support of such networks to meet their objective of assisting female entrepreneurs.

The high level of knowledge donating behaviour (M=3.82, SD = 0.83) in the female SMME networks suggests that although the majority of members join their networks for advice, mentoring and knowledge purposes (52,1%), they want to help other members. The members are willing to share their knowledge and are often part of these networks for giving rather than receiving purposes. This finding is supported by the item measuring shared goals where members indicated they share the value that helping others is enjoyable (M=3.72, SD=1.06). This is of particular relevance for female SMME network organisers as it demonstrates why female entrepreneurs should join such networks and provides impetus for sponsored or governmental support of such networks. A recommendation for further research is to extend the analysis of KSB by knowledge behaviour type - donating versus receiving behaviour of the female entrepreneurs.

Having established the nature and extent of KSB in female SMME networks, and briefly indicating the importance of KSB, the determinants of the KSB, as derived from social capital theory, are considered in the next four objectives for this study.

6.2.2. To determine the extent to which trust as a dimension of relational capital enables knowledge sharing behaviour in female SMME networks.

This research concluded that the more members of female SMME networks trust each other, the higher their knowledge sharing behaviour ($r=0.71$, $n=116$, $p <.01$). This confirmed previous research linking trust and KSB, although these studies concentrated on intra-organisational knowledge sharing (Chow & Chan, 2008; Darvish & Nikbakhsh, 2010; Hau et al., 2013) or KSB between learning or other types of partners (Chen et al., 2014; Nieminen, 2005; van Wijk et al., 2008). The specific value added by this research is that it confirms the relationship in the context of trust among members of female SMME networks, who are voluntary members of these open networks. Trust often supports tacit knowledge sharing through socialisation. This links back to the results from the nature of knowledge sharing from the first objective, where sharing of tacit knowledge has high (M=3.88, SD=0.99). When considering the type of trust

valued by members, competency-based trust scored highest, in that members indicated they had a high level (M=3.82, SD=1.01) of faith in the skills of other members. This means the female entrepreneurs trust each other's skills and that the source of this trust is based on the competency of the entrepreneur, rather than a benevolent-based trust (Abrams et al., 2003, p. 64). Trust can be considered a necessary condition for knowledge sharing (Bakker et al., 2006, p. 603). A recommendation stemming from this is that network organisers should provide more tools to their members to enable show-casing and sharing of skills, as their member trust each other's skills. This trust in each other's skills could benefit network members through sharing of skills-based knowledge. SMME network organisers could offer knowledge sharing tools based on member skills, for example expert-locator systems, or in skill-based cross-training (Becerra-Fernandez & Sabherwal, 2010, p. 165). More research into how these types of knowledge sharing systems would benefit female SMME networks is recommended.

6.2.3. To determine the extent to which shared social identity as a dimension of relational capital enables knowledge sharing behaviour in female SMME networks.

Social identity, as the second component of the relational dimension of social capital, was found to be highly correlated with KSB ($r=0.77$, $n=117$ $p < .01$). The higher members' social identity with their network, the higher their KSB. Results showed members felt strong bonds with each other and feelings of togetherness and closeness. This strong affiliation with their network is a positive sign for network organisers, reiterating how important the more intangible benefits of membership are to members. Surprisingly, this was not translated as strongly into a high level of pride in their network. A positive sign for future KSB in these networks is that social identity tends to develop over time, strengthening bonds (Mariotti, 2005, p. 14). Additionally, social identity is important for sharing of tacit knowledge (Nieminen, 2005, p. 113). A recommendation for future research is to focus on the relational dimension of social capital, as this research established the high level of tacit KSB and the importance members of the female SMME networks place on socialisation, bonding and togetherness. Further research should explore the link between

social identify and trust, as an important element of the relational element. Not only was the link between these scales and KSB found to be high and reliable in this study, but the nature of the knowledge shared has a better fit with relational social capital. A limitation of this study is that the relationship between social identity and trust was not studied, where a previous study has identified that there is a positive relationship between trust and social identity (Nieminen, 2005, p. 111). A more comprehensive scale for both trust and social identity would deepen the insights gained into these knowledge-enablers.

6.2.4. To determine the extent to which use of the SMME network's social media as a dimension of structural capital enables knowledge sharing behaviour in female SMME networks.

With the prevalence of social media as a communication and networking tool in everyday life, the hypothesis for this study assumed that the higher the members' social media usage, the higher their knowledge sharing behaviour in the female SMME network would be. Previous studies found evidence that social media facilitates KSB as a virtual network, (Chen et al., 2006, p. 16; Majchrzak et al., 2013, p. 13). However, these studies were not among female members of an SMME network. From the literature it was also expected that women would engage socially online and gain knowledge from their network (Chun, 2013, p. 27). Although a positive correlation was found between social media usage and the members' KSB, it was moderate in strength ($r=0.53$, $n=117$ and $p = .01$). Ellison et al. (2007, p. 1164) found that social media was important to maintain ties built between community members, however their research was on student communities, who most likely have a higher social media usage than the female SMME network members in this study, where more than three quarters of the members were over 40 years old (85, n=117). Social media has been identified as facilitating the combination of explicit knowledge, meaning that different forms of written knowledge are combined into more useful forms (Afzal et al., 2013, p. 766). Given that this research established that tacit knowledge sharing is preferred by members, this could be a reason why there is not a stronger link between social media usage and female SMME network members' KSB. Although members enjoyed checking their Facebook accounts, they were less likely to respond to posts, suggesting

that members' social media usage is passive. Without responding on social media, knowledge sharing cannot take place. Therefore, it is likely the members use their networks' social media posts for information purposes only, for example notification of the networking events. A recommendation could be for organisers to generate more interactive online conversations that could lead to knowledge sharing (Cao et al., 2015, p. 360). It does mean that networks can still be successful for KSB without the need for an online presence, or where their members may have limited Internet access or technical expertise. This could be useful for new initiatives for female entrepreneurial networks in rural or underprivileged communities. A limitation of this study was that only Facebook usage was included, as this was a previously tested scale, whereas some of the networks use alternate social media. However, the female SMME networks in this study generally use Facebook more than other social media. A recommendation for further research is to study the full spectrum of social media sites such as Twitter, Instagram and Pinterest, to determine their usage by and influence on KSB in female SMME networks. Further research could also focus on other elements of structural capital instead of social media usage. A commonly used factor in social media theory is social interaction ties, which has been found to improve KSB (Chiu et al., 2006, p. 1874; Darvish & Nikbakhsh, 2010, p. 34), and therefore it is recommended that this relationship also be tested in the context of female SMME networks.

6.2.5. To determine the extent to which shared goals of SMME network members as a as a dimension of cognitive capital enables knowledge sharing behaviour in female SMME networks

This study confirms the hypothesis that the more members share goals, the higher their KSB ($r=0.73$, $n=117$, $p = .01$). Members agreed that they enjoyed helping each other as a shared value and that they shared the same goal of learning from each other. Interestingly, there were mixed opinions on whether members share the goal of helping each other solve professional problems, with as many members highly agreeing as those who highly disagreed. This was the only item in the survey that had such polarising results. With shared vision being cited as a necessary condition for knowledge sharing (Li, 2005, p.

82) a strong relationship between the member's shared goals and KSB is important. Usually, shared vision is strong intra-organisationally, and is harder to maintain between organisations, such as SMME networks (Li, 2005, p. 93). A recommendation for network organisers who have the objective of helping members professionally is to reduce the discrepancy been those who strongly agree that they share the goal of helping each other professionally and those that do not. Further research into the reasons for this dichotomy is recommended. A limitation of this study was that the inter-item reliability score for the items making up this scale was below the accepted threshold. Therefore, a recommendation for future research is to use a scale comprised of more items, which has also been tested to have an acceptable level of inter-item reliability as measured by Cronbach's alpha. Possibly introducing another factor to represent the cognitive dimension could provide more insight into this aspect of social capital. The other factor commonly researched is shared language and culture, however this is typically more prevent and important intra-organisationally (Chiu et al., 2006, p. 1874; Darvish & Nikbakhsh, 2010, p. 35). As networks develop and mature they may develop a common language and a culture of their own, at which time research into this and KSB would be beneficial. Further research could also investigate the relationship between shared goals in the cognitive dimension of social capital, and the relational dimension, where shared goals could be an enabling factor for trust (Lefebvre et al., 2016, p. 572).

6.2.6. To determine whether demographic (age and education) and business related (length in business, type of industry, number of employees) factors affect knowledge sharing behaviour.

The most interesting conclusion resulting from this objective is that no relationship was found between any of these factors and KSB of the members of female SMME networks. This includes the demographics of the members in terms of their age and education and the nature of their business in terms of their industry sector, business experience or number of employees. The significance of this is that female SMME networks support KSB irrespective of the composition of the network membership. Therefore, network organisers do

not need to focus on any particular demographic in hoping to add value to their members' businesses by supporting KSB. They also do not need to focus on specific type or size of business as this will not enhance or decrease their members' KSB. Similarly, government programmes aimed at supporting female entrepreneurs can be diverse and inclusive. There is no need to focus on a particular age group or standard of education in terms of KSB, as a precursor to SMME performance. Further, sole proprietors or businesses with only a few members display similar KSB to SMMEs with more employees, and industry-specific support for SMMEs is not necessary from a KSB viewpoint. Experience measured in terms of years of business experience or number of years in business also does not determine KSB. Therefore, Government should promote inclusive female SMME networks.

A limitation here is that the sample size was too small to be representative, therefore the above findings only explain KSB for the members that completed the survey. The composition of all female SMME networks in South Africa could be different and relationships may then be found between these demographic and business specific factors and KSB. In conclusion, demographic and business factors do not affect KSB in the female SMME networks in this study.

6.3. Limitations and Recommendations for Future Research

The four knowledge enablers considered in this research were selected from the literature as having the potential to assist KSB in a female SMME network. This study included two components of relational capital. However, only one factor each was considered from the structural and cognitive dimensions. Other research into social capital has included shared language as another element of the cognitive dimension of social capital. This researcher still believes this is a less important factor in the context of KSB in female SMME networks, however it would be worth researching for the sake of completeness. Additionally, this study used social media usage as the factor to research in structural capital. Given that this relationship proved not to be as strong as expected, another factor that other researchers have used in structural capital

is network interaction ties. In retrospect this factor could prove to have a strong relationship with KSB in female SMME networks. Further research into the relationship between social interaction ties and female SMME network members' KSB is therefore recommended.

Structural equation modelling (SEM) has been used in previous research into social capital predictor and knowledge sharing outcome variables (Cao et al., 2015, p. 358; Chiu et al., 2006, p. 1881; Hau et al., 2013, p. 362; Lefebvre et al., 2016, p. 576; Wasko & Faraj, 2005, p. 46). Given that the inter-relations between the independent variables used in this study, SEM analysis is recommended for future research, however this would require a larger sample size (Nachtigall, Kroehne, Funke, & Steyer, 2003, p. 7).

The poor response rate limits the representiveness of the results in terms of generalising to the entire population of members of all female SMME networks. Future research on a larger sample is recommended. Since even multiple requests by the network organisers asking their members to complete the survey did not result in the required sample size, a different data collection method is suggested. Email and electronic links to online surveys are not recommended when high response rates are a priority (du Plooy-Cilliers & Cronje, 2014, p. 150). Longitudinal data from a larger dataset in future research may also produce more insight into KSB in female SMME networks. This is similar to a recommendation by Lefebvre et al. (2016, p. 577) in their research into social capital and KSB in learning networks.

A limitation of the shared goals scale is that it had a lower than expected level of inter-item reliability (as measured by Cronbach's alpha), even though the scale on which it was based had an acceptable reliability score. A more comprehensive scale to measure shared goals that is made up of more than three items is recommended for further research. The nature of the scales used to measure KSB meant that results are dependent on the members' perceptions. A recommended alternative is to conduct qualitative research to gain a deeper understanding of the female SMME network members' knowledge sharing behaviour. This would help uncover the motivations behind

KSB, particularly of a tacit nature, in female SMME networks and is the primary recommendation to improve the quality of findings in this research.

6.4. Recommendations for Female SMME Network Stakeholders

This research sought to examine knowledge sharing in female SMME networks and the enablers of their knowledge sharing behaviour. Based on the results, the following recommendations can be made for the various stakeholders of female SMME networks in South Africa.

6.4.1. Recommendations for Government and sponsors

Government, NGOs, and corporate sponsors interested in developing female entrepreneurs are recommended to invest in female SMME networks as a mechanism for knowledge sharing. Given the link between knowledge sharing and SMME organisational performance (Cao et al., 2015, p. 352; Easterby-Smith & Tsang, 2008, p. 677; Lefebvre et al., 2016, p. 570; Mc Manus et al., 2016, p. 588; Tohidinia & Mosakhani, 2010, p. 611; van Wijk et al., 2008, p. 5) this investment should translate into proven business performance in the SMMEs, thereby giving impetus to economic growth and community upliftment. Since this research determined that KSB in the networks was not contingent on the entrepreneur's age, education level or experience in business, this support and investment can be extended to any type of female SMME network, regardless of constituent membership. The industry and number of employees also had no relationship with the extent of knowledge sharing, therefore female SMME networks for all sizes and types of entrepreneurial businesses should be supported. The importance of networking and socialisation for knowledge sharing among female entrepreneurs provides an ideal platform for a mutually beneficial relationship with corporate sponsors. SMME development agencies are also recommended to provide infrastructure for skills sharing and sponsorship of networking events for new or existing female SMME networks, as part of overall government strategy to support female entrepreneurship.

6.4.2. Recommendations for female SMME Network organisers

Social capital was found to predict KSB in the female SMME networks, therefore it is recommended that the organisers of the networks support the knowledge enablers making up the dimensions of social capital. The organisers could, through socialisation and social media, promote activities that increase trust among members, particularly those related to the entrepreneurs' business competencies. This sharing of business skills could take the form of expert-locator systems, workshops and skill-based cross-training (Becerra-Fernandez & Sabherwal, 2010, p. 165).

It is recommended that the organisers provide direction to their members to encourage shared goals and identity (Smith, 2012, p. 301), thereby capitalising on the bonds members feel and improving the level of pride the members have in their network. More online knowledge sharing opportunities would increase knowledge sharing behaviour (Cao et al., 2015, p. 360), however this need not be via social media, as this was not found to be a strong link. Providing opportunities for members to meet and socialise is recommended as members favour tacit knowledge sharing and enjoy sharing their knowledge. Thus, female SMME networks operating in rural or underprivileged communities should be just as successful as those in urban areas using social media. There is also no reason to focus on a particular demographic or level of business experience, although membership by young entrepreneurs should be encouraged. To improve knowledge sharing through social media, organisers are recommended to post more interactive content that actively encourages their members to engage with each other, so that the social media platform becomes more of a community than an information delivery vehicle. However, organisers need not focus on social media as other forms of in-person knowledge sharing are preferred by their members. Organisers could promote the finding that their members enjoy helping others and are particularly inclined to demonstrate knowledge donating behaviour, as a reason for female entrepreneurs to join their network.

6.4.3. Recommendations for female entrepreneurs

Since the results show a high level of KSB, particularly the slight bias towards knowledge donating behaviour, it would be of benefit to the entrepreneurs if they joined a female SMME network, particularly when starting out and growing their business. Female entrepreneurs who are already members of these networks are encouraged to take advantage of the knowledge donating behaviour of other members and to share their skills through the high level of trust in each other's skills. Interactions between female entrepreneurs in networks facilitates business development and enhances success, which is the goal of most business owners (Deborah et al., 2015, p. 41).

6.5. Final Conclusion

The type of network is an important differentiator in terms of how social capital affects KSB. Since all networks are to some degree about social relationships (Smith, 2012, p. 300), the more types of networks researched, the better. This study contributes to the body of knowledge in KSB and the enablers of this, by studying female SMME networks. It confirms the link between social capital and KSB. The research found that the relational dimension is particularly important as an enabler of KSB in female SMME networks in South Africa. This insight gained from the special nature of the relations between members of female-based networks adds value to research on gender-specific networks. It is useful on a practical level for the organisers of South Africa female SMME networks and can be used by policy makers interested in supporting female entrepreneurship. Activities to promote trust, shared goals and identity would benefit members as it is these that enable KSB in female SMME networks.

Equally important were the findings that were not expected. Although social media usage was found to be moderately related to KSB in this research, the results show that social media usage was lower and more passive than expected. Network organisers could try to promote more online knowledge sharing opportunities but they need not expend valuable and scare resources on extended social media. Further, contrary to what many organisers of networks may expect, social media need not be a focus of their efforts, at least

until social media usage increases as younger, more intense social media users join the networks.

An enabling tacit sharing environment is recommended as not only is tacit knowledge sharing favoured by members, it is also useful and more difficult to share (Becerra-Fernandez & Sabherwal, 2014, p. 26). Thus, creating conditions to improve trust and opportunities to socialise would be of benefit (Smith, 2012, p. 301). Stakeholders in female SMME networks need not be concerned with focusing or narrowing their target membership, as KSB was found not to be related to specific types of women or specific types of businesses. With KSB previously linked to business performance and innovation, the emphasis that government policy has placed on supporting female entrepreneurship is South Africa is recommended to be extended to female SMME networks, as this research evidenced extensive KSB.

Of practical relevance, the KSB evidenced in SMME networks implies that there are significant benefits for female owners and managers of SMMEs in joining female SMME networks. Organisers of female SMME networks in South Africa should focus on providing mechanisms for their members to share knowledge, particularly tacit knowledge. This can be done through more networking events where socialisation aids the sharing of tacit knowledge.

There is intention by the SA government to support female entrepreneurs (Botha et al., 2007, p. 165; Deborah et al., 2015, p. 40). Government policy directed at improving and facilitating entrepreneurship, particularly the development of female entrepreneurs should increase their support of female SMME networks. This could be through funding, or other initiatives to grow existing organically grown networks, or through creating new networks specially aimed at reaching female entrepreneurs who are not currently part of a network. These networks should support tacit knowledge sharing.

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Appendix A - Questionnaire

Knowledge Sharing in Female SMME networks

Your frank answers will be greatly appreciated for this research into knowledge sharing in female business networks. Thank you very much for your time (approximately 5 minutes). Attached to the email with the link to this form is the full informed consent letter.
Thank you!
Paula Hall (paulahvc@gmail.com)

* Required

Welcome! Please indicate your consent for your responses to be used in this research. Your confidentiality is ensured. It should take no more than 5 minutes to complete. Thank you! *

- [ ] Yes, I grant my consent

Your business network

Please answer the following questions about your network membership

Which network did you get the link to this survey from (you can complete a separate survey for each)?

- ○ WIB
- ○ KZNWIB
- ○ BWA

Which other female business networks are you a member of?

- [ ] None
- [ ] WIB
- [ ] KZNWIB
- [ ] BWA
- [ ] Other:

Approximately how many years have you been a member of the network?

Choose

What is your main reason for belonging to your network?

- ○ Advice, mentoring and knowledge
- ○ Leads, sales and contacts
- ○ Personal, emotional and social support
- ○ Other

Knowledge types shared in my network

Please indicate your level of agreement with the following statements, where 1 = highly disagree and 5 = highly agree:

We share business reports and proposals with each other

	1	2	3	4	5	
Highly disagree	○	○	○	○	○	Highly agree

We share business manuals, models and methodologies with each other

	1	2	3	4	5	
Highly disagree	○	○	○	○	○	Highly agree

We share each other's successes and failures with each other

	1	2	3	4	5	
Highly disagree	○	○	○	○	○	Highly agree

We share business knowledge obtained from newspapers, magazines, journals, and television

	1	2	3	4	5	
Highly disagree	○	○	○	○	○	Highly agree

We share know-how from work experience with each other

	1	2	3	4	5	
Highly disagree	○	○	○	○	○	Highly agree

We share each other's know-where and know-whom

	1	2	3	4	5	
Highly disagree	○	○	○	○	○	Highly agree

We share expertise obtained from education and training

	1	2	3	4	5	
Highly disagree	○	○	○	○	○	Highly agree

Trust in my network

Please indicate your level of agreement with the following statements, where 1 = highly disagree and 5 = highly agree:

Other members of this network help me when I have a problem concerning my business

	1	2	3	4	5	
Highly diasagree	○	○	○	○	○	Highly agree

I can rely on the other members of this network to support me in my business

	1	2	3	4	5	
Highly disagree	○	○	○	○	○	Highly agree

I can count on the other members of this network to do what they say

	1	2	3	4	5	
Highly disagree	○	○	○	○	○	Highly agree

I have faith in the skills of the other members of this nework

	1	2	3	4	5	
Highly disagree	○	○	○	○	○	Highly agree

Social identity with the network

Please indicate your level of agreement with the following statements, where 1 = highly disagree and 5 = highly agree:

I feel a bond with the other members of my network

	1	2	3	4	5	
Highly disagree	○	○	○	○	○	Highly agree

I am proud to be a member of my network

	1	2	3	4	5	
Highly disagree	○	○	○	○	○	Highly agree

I have a feeling of togetherness or closeness in my network

	1	2	3	4	5	
Highly disagree	○	○	○	○	○	Highly agree

I have a strong positive feeling toward my network

	1	2	3	4	5	
Highly disagree	○	○	○	○	○	Highly agree

Social media usage

Please indicate your level of agreement with the following statements, where 1 = highly disagree and 5 = highly agree:

I enjoy checking my network's Facebook account

	1	2	3	4	5	
Highly disagree	○	○	○	○	○	Highly agree

Using Facebook is part of my everyday routine

	1	2	3	4	5	
Highly disagree	○	○	○	○	○	Highly agree

I would be disappointed if I could not use Facebook at all

	1	2	3	4	5	
Highly disagree	○	○	○	○	○	Highly agree

I respond to content that my network and others share using Facebook

	1	2	3	4	5	
Highly disagree	○	○	○	○	○	Highly agree

Shared goals in my network

Please indicate your level of agreement with the following statements, , where 1 = highly disagree and 5 = highly agree:

Members of my network share the goal of helping others solve their professional problems

	1	2	3	4	5	
Highly disagree	○	○	○	○	○	Highly agree

Members of my network share the same goal of learning from each other

	1	2	3	4	5	
Highly disagree	○	○	○	○	○	Highly agree

Members of my network share the same value that helping others is pleasant

	1	2	3	4	5	
Highly disagree	○	○	○	○	○	Highly agree

Knowledge sharing behaviour in my network

Please indicate your level of agreement with the following statements, , where 1 = highly disagree and 5 = highly agree:

When I've learned something new, I tell the other members of my network about it

	1	2	3	4	5	
Highly disagree	○	○	○	○	○	Highly agree

I tell the other members of my network what I know, when they ask me about it

1	2	3	4	5
○	○	○	○	○

I tell the other members of my network about my skills, when they ask me about it

	1	2	3	4	5	
Highly disagree	○	○	○	○	○	Highly agree

When they've learned something new, other members of my network tell me about it

	1	2	3	4	5	
Highly disagree	○	○	○	○	○	Highly agree

I ask other members of my network what they know when I need particular knowledge *

	1	2	3	4	5	
Highly disagree	○	○	○	○	○	Highly agree

The other members of my network tell me what they know, when I ask them about it *

	1	2	3	4	5	
Highly disagree	○	○	○	○	○	Highly agree

The other members of my network tell me about their skills, when I ask them about it *

	1	2	3	4	5	
Highly disagree	○	○	○	○	○	Highly agree

Demographic and business information

Please answer the following questions. Select one answer from the options provided.

Please indicate your age group:

- ○ under 21
- ○ 21-30
- ○ 31-40
- ○ 41-50
- ○ 51-60
- ○ Over 60

Highest education level

- ○ Secondary school not completed
- ○ Secondary school completed
- ○ Tertiary completed
- ○ Post-graduate completed

How many years of business experience do you have?

- ○ 1 - 5
- ○ 6 - 10
- ○ 11 - 15
- ○ 16 - 20
- ○ 21 - 25
- ○ 26 - 30
- ○ 31 - 35
- ○ 36 - 40
- ○ More than 40

Please indicate the your business classification/sector

- ○ Agriculture
- ○ Mining
- ○ Manufacturing
- ○ Electricity, gas & water
- ○ Services
- ○ Wholesale and retail trade
- ○ Construction
- ○ Trade & accomodation
- ○ Transport & communication
- ○ Finance & business services
- ○ Community
- ○ Other: _____

Please enter the number of full-time employees in your business, including yourself:

- ○ 1-10
- ○ 11-20
- ○ 21-30
- ○ 31-40
- ○ 41-50
- ○ 51-60
- ○ 61-70
- ○ 71-80
- ○ 81-90
- ○ 91-100
- ○ More than 100

Appendix B – Informed consent letter

Information Sheet and Consent to Participate in Research

Date: 5 April 2018

Greetings,

My name is Paula Hall, I'm a MCom student from the School of Management, IT and Governance, at the University of KwaZulu-Natal - Telephone number: 0767097099 Email: paulahvc@gmail.com

You are being invited to participate in a study that involves research on the enablers of knowledge-sharing behaviour in South African female SMME networks. The aim and purpose of this research is to determine the nature and extent of knowledge sharing behaviour in female business networks, and the enablers of this. The study is expected to include members of three KZN female networks, totally approximately 700 participants, these networks are formal organisations for which membership is required. Members can meet in person and online via social media. It will involve a once-off survey, where the organiser of the network will email their membership list a link to an online questionnaire. The duration of your participation if you choose to participate and remain in the study is expected to be 10-15 minutes – as long as it takes to complete the survey.

We hope that the study will be of benefit to your network in better understanding what enables knowledge sharing in the network. Little research has been conducted into specifically female networks and knowledge sharing, particularly in the South African context.

This study has been ethically reviewed and approved by the UKZN Humanities and Social Sciences Research Ethics Committee (approval number HSS/0400/018M)).

In the event of any problems or concerns/questions you may contact the researcher at paulahvc@gmail.com or the UKZN Humanities & Social Sciences Research Ethics Committee, contact details as follows:

HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS ADMINISTRATION
Research Office, Westville Campus
Govan Mbeki Building
Private Bag X 54001
Durban 4000 KwaZulu-Natal, SOUTH AFRICA
Tel: 27 31 2604557- Fax: 27 31 2604609
Email: HSSREC@ukzn.ac.za

Your participation in the study is voluntary and by participating, you are granting the researcher permission to use your responses. You may refuse to participate or withdraw from the study at any time with no negative consequence. There will be no monetary gain from participating in the study. Your anonymity will be maintained by the researcher and the School of Management, I.T. & Governance and your responses will not be used for any purposes outside of this study.

All data, both electronic and hard copy, will be securely stored during the study and archived for 5 years. After this time, all data will be destroyed.

If you have any questions or concerns about participating in the study, please contact me or my research supervisor at the numbers listed above.

Sincerely

Paula Hall

Appendix C – Gatekeepers consent letters

Women In Business

To whom it may concern,

As the CEO of the business network Women in Business, I hereby give permission for Paula Hall, UKZN MCom student number 871871741, to conduct research on members of the network.

I am happy to assist where possible in facilitating access to the network. The student may use the name Women in Business in her research.

I understand that the data collected will be treated confidentially and that I will have access to the results of the research.

Alison Engelbrecht CEO:
Women in Business

Date: 8th February 2018

whdswho Ali GyeL«ea4t MARQUIS WhosWho

www.womeninbusiness.org.za ceo@womeninbusiness.org.za Cell: 082 9722 675

WOMEN Cherie Blair FOUNDATION FOR WOMEN A MEMBER OF THE PCB PIETERMARITZBURG CHAMBER OF BUSINESS

KZN Women in Business
Positive Women Working Together for Success
Registration No: 151-748 NPO
10 Somerset Drive, Westville, 3629
Phone: (031) 266 2892
Email: meetings@kznwib.co.za / info@kznwib.co.za
Website: www.kznwib.co.za

IN BUSINESS

6 February 2018

To Whom it My Concern

As chairperson of KZNWIB , I hereby give permission for Paula Hall, UKZN MCom student number 871871741 , to conduct research on members of the network.

We can assist where possible in facilitating access to our organisation's network.

The student may use the name KZNWIB (KZN Women in Business) in her research.

We understand that the data collected will be treated confidentially and that we will have access to the results of the research to share with our active membership and subscribed members.

Any changes to this agreement must be done in writing and approved by all parties involved.

We have an active membership of 192 women and a subscribed membership of 1399.

Many thanks and Kind Regards,

Chrystal Austin
Chairperson

Lesley Forbes
Vice-
Chairperson

BUSINESSWOMEN'S
ASSOCIATION OF SOUTH AFRICA

Gatekeeper's Consent

I, Catherine Smith, in my capacity as Durban Branch Manager hereby give permission to **Paula Hall (Student No. 871871741)** to conduct research in my organization.

The student MAY use the name of the organisation in the dissertation.

This research will be in the form of one mailer sent to the BWA Durban database as well as one Social Media post made onto the Branch Facebook Page.

Signature of Manager/Owner/Gatekeeper:.....

Date: 25th May 2018.....

Head Office:
P O Box 2272
Houghton 2041
Gauteng

Tel: 011 484 4945
Email: nadmin@bwasa.co.za
Web: www.bwasa.co.za

NPO: 023-513
VAT NO: 4470208705

Appendix D –KSB and demographic and business-related factors

Results of analysis to determine if KSB differs by years in business, member age, education level, business sector and number of employees showed no statistically significant results:

KSB and years in business

A one way between groups Anova test was performed to determine if KSB was different depending on the number of years the network members had been in business. Both variables were continuous. No statistically significant result was found.

KSB and years in business

Years	N	Mean	Std. Deviation
1	28	3.7500	.65016
2	20	3.4000	.71444
3	12	3.4980	.89821
4	9	3.9683	.67679
5	12	4.0357	.81299
6	6	4.1190	.88256
7	2	4.0000	.00000
8	5	4.0524	.83204
9	2	4.2857	.20203
10	11	3.6883	1.23688
13	1	3.8571	.
16	1	3.1429	.
20	1	5.0000	.
Total	110	3.7567	.80990

ANOVA

Knowledge sharing behaviour scale

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	8.573	12	.714	1.101	.368
Within Groups	62.924	97	.649		
Total	71.497	109			

KSB and age group

The Kruskal-Wallis H test showed that there was no statistically significant difference in KSB based on age group.

KSB and age

Ranks			
	Age group	N	Mean Rank
Knowledge sharing behaviour scale	21-30	7	40.64
	31-40	25	63.24
	41-50	48	60.26
	51-50	30	57.92
	Over 60	7	58.21
	Total	117	

KSB grouping by age

Test Statistics[a,b]	
	Knowledge sharing behaviour scale
Kruskal-Wallis H	2.552
df	4
Asymp. Sig.	.635

a. Kruskal Wallis Test

b. Grouping Variable: Age group

KSB and Education Level

No statistically significant difference based on education level was found:

KSB and Education Level

Ranks			
	Education Level	N	Mean Rank
Knowledge sharing behaviour scale	Secondary school not completed	1	92.00
	Secondary school completed	6	54.75
	Tertiary completed	54	61.81
	Post-graduate completed	55	55.05
	Total	116	

KSB grouped by education level

Test Statistics[a,b]	
	Knowledge sharing behaviour scale
Kruskal-Wallis H	2.174
df	3
Asymp. Sig.	.537

a. Kruskal Wallis Test

b. Grouping Variable: Education Level

KSB and business sector

The business sector the members' business operating in has no significant effect on KSB according to the Kruskal Wallis tests results depicted below:

KSB and Business Sector

Ranks			
	Business sector	N	Mean Rank
Knowledge sharing behaviour scale	Other	31	58.50
	Manufacturing	7	32.93
	Services	37	56.04
	Wholesale and retail trade	8	70.44
	Construction	2	49.00
	Trade & accommodation	4	83.63
	Transport & communication	5	63.90
	Finance & business services	15	53.40
	Community	6	72.67
	Total	115	

KSB grouped by business sector

Test Statistics[a,b]	
	Knowledge sharing behaviour scale
Kruskal-Wallis H	9.355
df	8
Asymp. Sig.	.313

a. Kruskal Wallis Test

b. Grouping Variable: Business sector

KSB and number of employees

The effect of the different grouping for number of employees can be seen in below.

KSB and number of employees

Ranks			
	Number of employees	N	Mean Rank
Knowledge sharing behaviour scale	1-10	84	60.71
	11-20	13	68.81
	21-30	3	54.50
	31-40	2	23.00
	41-50	3	44.00
	61-70	1	30.50
	71-80	1	93.00
	91-100	1	15.50
	Over 100	9	47.61
	Total	117	

No significant difference in KSB behaviour was found based on number of employees:

Test Statistics[a,b]	
	Knowledge sharing behaviour scale
Kruskal-Wallis H	8.596
Df	8
Asymp. Sig.	.377

a. Kruskal Wallis Test

b. Grouping Variable: Number of employees

Appendix E – Ethical Clearance Letter

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

18 June 2018

Ms Paula Hall (871871741)
School of Management, IT & Governance
Pietermaritzburg Campus

Dear Ms Hall,

Protocol reference number: HSS/0400/018M
Project Title: Enablers of Knowledge Sharing Behaviour in female SMME Networks

Approval Notification – Expedited Application

In response to your application received 03 March 2018, the Humanities & Social Sciences Research Ethics Committee has considered the abovementioned application and the protocol has been granted **FULL APPROVAL.**

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment /modification prior to its implementation. In case you have further queries, please quote the above reference number.

PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

The ethical clearance certificate is only valid for a period of 3 years from the date of issue. Thereafter Recertification must be applied for on an annual basis.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully

.....
Professor Shenuka Singh (Chair)

/ms

Cc Supervisor: Professor Brian McArthur and Professor Debbie Vigar-Ellis
Cc Academic Leader Research: Professor Isabel Martins
Cc School Administrator: Ms Debbie Cunynghame

Humanities & Social Sciences Research Ethics Committee
Professor Shenuka Singh (Chair)
Westville Campus, Govan Mbeki Building
Postal Address: Private Bag X54001, Durban 4000
Telephone: +27 (0) 31 260 3587/8350/4557 **Facsimile:** +27 (0) 31 260 4609 Email: ximbap@ukzn.ac.za / snymanm@ukzn.ac.za / mohunp@ukzn.ac.za
Website: www.ukzn.ac.za