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2016-12-15

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http://hdl.handle.net/10539/21656

Maharaj, N., & Naicker, V. (2016). The value of knowledge acquired via online social capital: LinkedIn, a South African perspective. The African Journal of Information and Communication (AJIC), 18, 55-74. https://doi.org/10.23962/10539/21656

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The Value of Knowledge Acquired via Online Social Capital: LinkedIn, a South African Perspective

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Abstract
This study investigated the value of a member's online social capital, in the social networking platform LinkedIn, in the following areas: member's subject matter proficiency, member's firm's problem solving ability, and member's firm's innovation process. The analytical framework used the concepts of social networks and online social networks (OSNs); social network ties; social capital and online social capital; knowledge and novel knowledge; communities of practice (CoPs); problem solving; and innovation. Quantitative methods were used, involving analysis of data collected from a sample of LinkedIn members residing in South Africa. It was apparent from the analysis that knowledge acquired on LinkedIn, relating to a member's subject matter proficiency, benefited the member's firm. It was also evident that this knowledge contributed to the firm's problem solving process. The data did not, however, confirm or refute the proposition that knowledge acquired by members on LinkedIn contributed to their firms' innovation. An overall observation from the data was that members did not perceive substantial value from the knowledge available on LinkedIn. The authors therefore recommend that greater initiative be taken by members and firms to adopt open networking approaches, using online social networks such as LinkedIn, starting with attitudinal and policy considerations on the part of firms.

Keywords
LinkedIn, social networks, social capital, online social capital, dense networks, weak ties, strong ties, structural holes, Web 2.0, online social networks (OSNs), subject matter proficiency, problem solving, novel knowledge, innovation, communities of practice (COPs)

DOI: https://doi.org/10.23962/10539/21656

Recommended citation
Maharaj, N., & Naicker, V. (2016). The value of knowledge acquired via online social capital: LinkedIn, a South African perspective. *The African Journal of Information and Communication (AJIC), 18,* 55-74. https://doi.org/10.23962/10539/21656



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1. Introduction

The emergence of online social networks (OSNs) and Web 2.0 has significantly contributed to the use of the Internet, as evidenced by the substantial membership of popular OSNs such as LinkedIn, which has over 450 million members (LinkedIn, 2016). Members are able to construct an online identity and elicit voluntary connections with other members. They are also able to communicate with other members or broadcast information to multiple members within and beyond their network. LinkedIn is the context of this study and it is distinguished from the other online social networks because its members are predominantly professionals who seek economic and non-economic benefits from their online social capital (LinkedIn, 2016). The question that arises is: What are the implications of OSNs for firms? According to Zaglia, Waiguny, Abfalter and Müller (2015), social networks are a contributing factor in the growth and performance of firms, and if the OSN's provide a trusted environment, these networks will become more flexible and enduring by enhancing cooperation and building loyalty.

In the present extremely competitive business environment, firms are continuously seeking to gain a sustainable competitive advantage over their rivals (Grant, 2010). In order to achieve their strategic objectives, firms must deal with innumerable challenges to cultivate a sustainable competitive advantage. It may be argued that social capital resulting from participation in OSNs has a positive impact on social status and sociability and may therefore have a positive impact for firms arising from employee presence on OSNs. Hence, the objective for this study was to analyse whether the online social capital prevalent on LinkedIn can contribute to addressing three challenges. The first challenge is the development of the subject matter proficiency of the firm's human capital, since the core competence of a firm is determined by the strength of its human capital (Erasmus & Schenk, 2008). The second challenge is the firm's problem solving ability or its ability to transform its knowledge and intellectual property embedded within its human capital, both tacit and explicit, into viable solutions to address its operational business problems. Finally, the study evaluates the online social networks site LinkedIn as a source of knowledge that will foster innovation. Innovation is a concept that must co-exist with the need for change and it is widely believed that innovation enables firms to realise and maintain their competitive advantage in their business environments (Trott, 2012).

The research propositions for this study are accordingly stated as follows:

- **P_1:** Knowledge acquired on LinkedIn that is related to a member's subject matter proficiency benefits the member's firm.
- **P_2:** Knowledge acquired by a member on LinkedIn contributes to problem solving by the the member's firm.
- **P_3:** Knowledge acquired by a member on LinkedIn contributes to innovation by the member's firm.

OSNs such as LinkedIn will progressively become a more viable source of knowledge, in particular tacit knowledge, the reason being that, when establishing a knowledge sharing community and expert locating services in social media, they will support implicit knowledge sharing among individuals (Gordeyeva, 2010). This will enable firms to use their employees as conduits of knowledge from the broader environment to the firm and vice versa. Members of online social networks display a willingness to share their explicit and tacit knowledge with their online associates, despite weak ties between these members.

LinkedIn offers a potentially vast knowledge base of explicit and tacit knowledge that can be conveniently sourced online. Investigating the effectiveness of this knowledge source, within the scope and limitations of this research, may provide the foundations for further research into the potential of online social networks as viable alternatives to formalised classroom-based or non-Web 2.0-based online learning systems.

2. Literature review

Organisational knowledge is a complex construct that is composed of the collective explicit and tacit knowledge of its individuals, as well as an intangible component which remains within the organisation over time (Trott, 2012). Acquiring profound insight into the construct of the value of knowledge acquired via online social capital requires a detailed analysis of key foundational theories. Table 1 below summarises the theoretical framework.

Table 1: Summary of the concepts and artefacts for this study

Major concept or theory	Relevance to study
Social networks and online social networks	The focus of this study is the value of knowledge on LinkedIn, which is an online social network.
Social network ties	Members' ties are the primary source of knowledge on LinkedIn.
Social capital and online social capital	These are foundational concepts for this study of online social networks (OSNs) and knowledge exchange within OSNs.
Knowledge and novel knowledge	The first research objective of the study is to ascertain the value of knowledge acquired towards member proficiency.
Communities of practice and problem solving	The second research objective of the study is to ascertain the value of knowledge acquired towards problem solving.
Innovation	The third research objective of the study is to ascertain the value of knowledge acquired towards innovation.

Social networks

Networks can be defined as specific types of relationships connecting defined sets of people, objects or events (Knoke & Kuklinski, 1982, cited in Portes, 1998). When people are connected via these *specific types of relationships* the network is described as a social network. The defined sets of people, objects and events are often referred

to as nodes in a network. A key characteristic of the relationships in social networks emerges from the strength of the relationship or tie, i.e., a relationship can be categorised as a weak tie or a strong tie. Weak ties are usually bound by professional relationships or civic relationships with geographical proximity and have a low level of affection during exchanges (Olsen, 2008). People sharing weak ties usually interact less frequently through remote means. While geographic proximity in professional and civic relationships may lead to face-to-face interaction, the nature of the professional or civic relationships determines the frequency of interaction more than the emotive will of the related people (Olsen, 2008). Weak ties are prevalent in online social networks such as LinkedIn, where open networkers are prepared to connect to others, whom they have never met face-to-face, to acquire some form of benefit from the association. Connections between people who have met face-to-face in the past are also considered to be weak ties. Strong ties are characterised by emotional exchange, including support and advice underpinned by high levels of trust between members of the network possessing such ties (Duncan, 2012). Families and close friendships are forms of social networks that exhibit strong ties between their members. Interaction between people (members) with strong ties is usually face-to-face when there is geographical proximity, but also includes frequent remote communication such as online communication and telephonic communication in the absence of geographical proximity. Ostensibly, the corporate context is not devoid of strong ties. The existence of corporate social capital within firms emphasises the role of trust and shared objectives within these organisations (Dirks & Ferrin, 2001, cited in Benton, 2013).

The strong ties in the professional context are often present in closed or dense networks, which are social network structures where all members know each other. The dense ties cultivate communal duties, reciprocity, cohesiveness and enforcement of shared norms, and closed networks facilitate organisation, unity and common understanding (Benton, 2013). The aforementioned roles of such dense social networks have an inherent weakness, which is their inability to synthesise new or novel knowledge. This inherent weakness of dense networks has impelled the participation of many individuals, who are cognizant of this, towards open networking. The idea that more novel knowledge is exchanged between members with weak ties stems from the analysis that knowledge shared amongst closely tied members is mostly overlapping (Pénard & Poussing, 2010). Put differently, members of a strongly tied network tend to know what the other members within that network also know. Similarly, what has been referred to as "The Daily Me" can be a critical component of the *echo chamber effect*, a phenomenon exhibited in those Internet services where like-minded people listen only to those with whom they already agree (David, 2004).

The greater span of weak tied networks implies the prevalence of broader knowledge within such networks, as compared to smaller dense networks (Blanchard & Horan, 1998). The social network concept of structural holes, which refers to the

weaker connections between dense networks, presents attractive opportunities for weak tied members whose connections span these dense groups, since these members will have access to novel and heterogeneous knowledge across the groups (Widên-Wulff, 2007). Structural holes are prevalent on the online social network LinkedIn, with weak tied members each, in turn, being members of their own professional dense face-to-face networks. A thought-provoking and paradoxical view relating the concepts of social networking and knowledge transmission was posited by Anderson-Gough, Grey and Robson (2006, p. 236):

> it is possible to see how networking refers to a form of skill or expertise which is largely tacit and yet provides a kind of "social architecture" within and through which both professional knowledge and professional behaviour can be transmitted.

The notion is paradoxical since it is widely accepted in knowledge management theory that tacit knowledge is more difficult to disseminate than explicit knowledge; yet social networking, described as a skill which is "largely tacit", has provided a platform ("social architecture") for the transmission of such tacit professional knowledge. The following question now emerges: What motivates people to participate in and sustain a social network?

Social capital

Bourdieu defined social capital as "the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance or recognition" (Bourdieu, 1985a, p. 248). Bourdieu's definition of social capital included two distinct elements, namely the social relationship permitting access to the resources held by the respective acquaintances; and the extent and quality of the resources available (Bourdieu, 1985a; 1985b). Portes further analyses social capital by considering the impetus for the actors in the relationships, namely the donors and recipients. Recipients are ever willing to acquire access to useful resources that could result in economic or non-economic benefits, thus the impetus for recipients is rather logical (Portes, 1998). More complex though is the willingness of donors to provide resources without the guarantee of a return: Why would members of online social networks share tacit knowledge with their weak ties? The notion of norm of reciprocity offers an explanation for this behaviour. The norm of reciprocity holds that donors provide access to valuable resources to target recipients, with the expectation that these generous acts will be rewarded at a later stage by those recipients (Putnam, 1995, cited in Blanchard & Horan, 1998; Aguirre, 2011).

Two major benefits in the use of information and communication technologies (ICTs), such as OSNs, in enriching social capital are asynchronicity and customisability (Kobayashi, 2012). Asynchronicity refers to the asynchronous communication

between members of OSNs. Members can communicate conveniently at appropriate times of the day, when they are not otherwise occupied, via asynchronous messaging facilities on OSN sites. Synchronous communication on the other hand occurs in real-time and may not always be appropriate. Customisability refers to the ability of members to communicate in different patterns as required viz., one-to-one, one-to-many, and many-to-many. The value of one-to-one communication is readily understandable; while the utility of one-to-many and many-to-many forms of communication is that information and resources could reach a larger portion of the online social network. Apart from norms and networks, trust is also a vital component of social capital. Understanding online social capital requires an examination of the concept of online social networks, discussed below.

Online social networks

An OSN is a collection of individuals (members) connected together by a set of relations that are administered through a website (Claybaugh & Haseman, 2013). Claybaugh and Haseman further allude to the usefulness of social networking facilitated through the existence of virtual communities on the Internet; and remark on how the strength of connections or ties require fewer social assets when engaged via online means. On LinkedIn for example, weak tied relationships can be sustained through regular resource exchange with minimal face to face engagement. An obvious, but significant, difference between OSNs and traditional social networks is the lack of unifying physical activities in online social networks. On the OSN site LinkedIn, weak tied connections have little to no face to face interaction, since the relationship can be sustained and mediated online.

Knowledge acquisition and online social networks

Knowledge can be defined as a synthesis of experience, values, contextual information, expert understanding and insight that delivers a platform for assessing and incorporating new understandings and information (Tiwana, 2002). Tiwana further states that, although knowledge originates from people's cognition, it becomes embedded in an organisation's procedures, processes, ways of working, systems and norms. The quality of an organisation's knowledge is thus a central factor in determining its capability. Knowledge can be transformed into information, and OSNs are an abundant source of information, with information exchange happening constantly, driven by both organisational and individual motivations (Widên-Wulff, 2007).

Organisational motivations for knowledge sharing usually pertain to branding activities and creation of awareness to supplement competiveness. Individual motivations are more complex and include protective and enhancement motives (Nov, 2009). The protective motive notion posits that individuals will volunteer information to reduce their guilt associated with the perception of being more privileged than others. The enhancement motive notion, in contrast, posits that a person seeks to further enhance the perceived self-worth of a person by sharing information. Although people have

access to ample IT support and knowledge management databases, and the process of sourcing knowledge is embedded in the organisations way of working, they rely mainly on their social network within the organisation to acquire new information and create novel knowledge (Monti & Soda, 2014).

An OSN such as LinkedIn can potentially provide an extension of an individual's internal, organisational social network. OSNs such as LinkedIn become particularly useful for sourcing novel knowledge that may only be found beyond a dense network such as an organisation. LinkedIn can be seen as a social learning environment (SLE), which is an environment where individuals and groups can connect and co-create content, exchange knowledge and learn from one another to improve their personal and professional competence (Jones, Pole, Hole, & Williams, 2012). A key differentiator between SLEs and traditional organisational learning is that participants have control over their time, working space, actual presence, the activities they perform and the content they choose to consume.

The variety of content provided by the social network is also an advantage of SLEs over standard computer-based training, which usually offers fixed content that is pre-recorded. SLEs such as LinkedIn are ideal platforms for informal and borderless learning or knowledge acquisition (Jones et al., 2012). The first research objective for this study was to ascertain whether members of LinkedIn can enhance their subject matter proficiency through knowledge acquired from the OSN site.

Community of practice (CoP) and problem solving

A community of practice (CoP) is a group of individuals who have common interests and practices, or a common area of expertise, for example in their professional occupations, and who interconnect frequently to share knowledge regarding their interests (Chatti, 2009). CoPs are enabled on online platforms through the emergence of Web 2.0 technologies. Chatti (2009) defines Web 2.0 as the evolution of the World Wide Web towards a "read-write" platform where anyone can consume or produce knowledge and thereby contribute towards collaboration. Online social networks are ideal platforms for CoPs -- in particular LinkedIn, which is renowned for its features for professionals. The second research objective of this study was derived from the notion that the online social network LinkedIn is a suitable platform for a CoP: to ascertain whether knowledge acquired by members from the OSN site can facilitate problem solving in firms. The idea that new knowledge should be made accessible to dense networks cannot be overstated, as dense networks are susceptible to knowledge stagnation and this can impair firm competitiveness.

Novel knowledge and innovation

Members of an organisation benefit from external network connections because they gain access to novel knowledge, skills, and philosophies not available within their dense network (Wasko & Faraj, 2005). The acquisition of novel knowledge is facil-

itated by the absence of restraints of hierarchy and local rules. Novel knowledge is a more likely source of innovation than existing knowledge, since novel knowledge is more likely to inspire new thinking. Innovation should be seen as a process which involves the creation of products (or services) from inventions or new discoveries and the use of novel ways of doing things (Trott, 2012). The third research objective of this study, which is derived from the notion that OSNs are a viable source of novel knowledge, was to ascertain whether a member of LinkedIn can utilise knowledge acquired from the OSN site to facilitate innovation in the member's firm.

3. Quantitative survey design

The research methodology employed in this study is quantitative in nature and involves the analysis of data collected from a sample of LinkedIn members residing in South Africa. The data were collected by means of a structured online survey, which was also published to the researcher's first level connections on LinkedIn. The questions in the survey were designed to gauge the respondents' perceptions in relation to the three research objectives. Figure 1 below provides the overall process used for data collection. Data collection was conducted online using the SurveyMonkey tool.

Figure 1: Overall data collection process

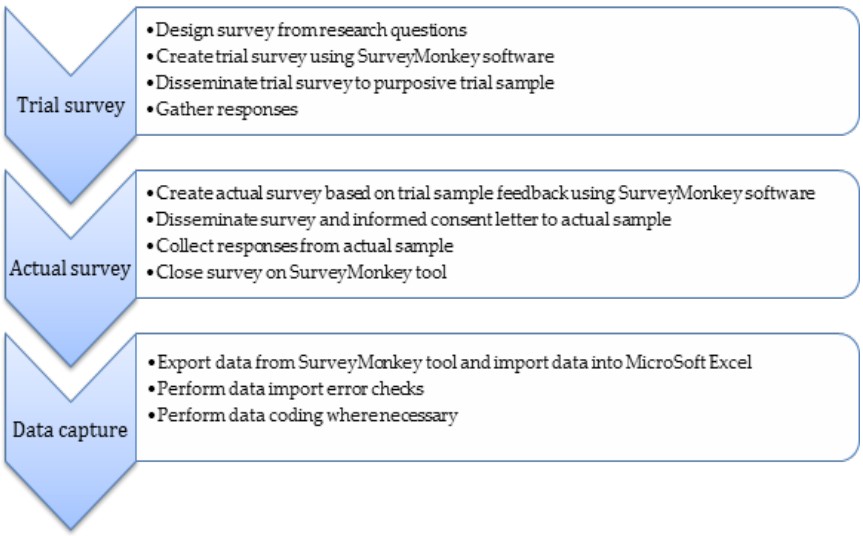

Table 2 lists the variables used in the survey and associated scale type. The survey was purposely designed to be completed promptly and contained variables that were readily known to the respondents. The intent was to increase survey response rate and reduce abandon rates to achieve the maximum sample size possible from the target sample.

Table 2: Variables used for structured survey

Variable	Scale of measurement
Country of residence	Nominal
Gender	Nominal
Age	Ratio
Highest level of education completed	Nominal
Work experience	Ratio
Number of LinkedIn connections	Ratio
Time spent on LinkedIn	Ratio
Knowledge and proficiency	Ordinal
Knowledge and problem solving	Ordinal
Knowledge and innovation	Ordinal

Country of residence was included to clearly demarcate the South African residents for the analysis. The gender of the members of the sample was recorded in order to compare the gender profile of LinkedIn users with the profile of other sources. Age class intervals were selected, in order of youngest to oldest, to demarcate scholars, university students and professionals at different stages of their careers. The highest level of education completed by the respondents provided an indication of their formal education status. LinkedIn is associated with working professionals who have had some form of formal education. The researcher's intent was to substantiate this association to some extent by describing the samples' levels of education obtained. The LinkedIn usage profile of the sample was captured in two variables, namely "number of LinkedIn connections" and "time spent on LinkedIn".

These variables provide an indication of the extent to which the respondents use LinkedIn. Typically, members with more LinkedIn connections use the online social networks more frequently and are probably longer tenured members. Members who spend more time on the OSNs are considered to be heavier users. The respondents' number of LinkedIn connections was recorded to provide an indication of how many first level connections they have. The value of knowledge acquired on LinkedIn towards a member's subject matter proficiency, towards problem solving, and towards innovation, were recorded in three Likert scale formats. All questions in these formats required one of five possible responses (never, rarely, sometimes, often, or very often) based on the respondent's perception of knowledge gained in relation to these three areas.

Two non-probability methods of sampling were used, namely a combination of convenience and multiplicity sampling (Diamantopoulos & Schlegelmilch, 2000). The researcher's first level connections were accessible on the LinkedIn site via a broadcast and LinkedIn's internal messaging facility. All potential participants were also requested to forward the survey to their first level connections. The target response

sample was 50 (N ≥ 50) respondents to enable meaningful cross-tabulation for analysis. The use of the non-probability sampling methods meant that, in theory, the research findings are not generalisable to the universe (N= 3million). However, it is debateable whether human beings' perceptions are generalisable in either case, namely in non-probability samples or probability samples (Leedy & Ormrod, 2010). The researcher felt that a coherent representation for this study is a significant sample (N ≥ 50) that includes a range for gender, age, education and work experience diversity.

The anonymous nature of the survey, as well as the design of the Likert scales, served to strengthen the authenticity of the respondents' answers. These factors could also have contributed to minimising social desirability bias, where respondents would be inclined to depict themselves in a more positive light. Likert scale items were presented as questions to minimise acquiescence bias (the inclination to agree with statements presented).

With respect to limitations, the perceptions of firms regarding the research objectives were not considered for this study. The reason for not pursuing this approach was the practical consideration of correlating the findings for firms with the findings for respondents. The assumption made by the researcher was that the respondents' perceptions represented their firms' perceptions to a sufficient extent. The researcher saw it as prudent to use a Likert scale to capture the respondents' perceptions on knowledge they have acquired on LinkedIn. This meant that the data captured on the variables linked to the research objectives could only be measured in ordinal scales. The researcher was thus limited to non-parametric tests on these variables during the analysis, given the sample size achieved.

4. Research findings and analysis

Fifty-eight (58) responses were received in total and 55 of the respondents indicated that they resided in South Africa (N=55). The sample included 12 females and 43 males. Twenty-two of the respondents, or 40%, were in the age group 30-39, while 18, or 33%, of the respondents were in the age group 40-49. This is consistent with the view that LinkedIn members are generally individuals with work experience. The perception that LinkedIn users are primarily professionals was substantiated by the finding that 91% of the respondents had completed formal education above high school. Additionally, 93% had more than five years' work experience.

LinkedIn usage profile of sample

An equal number of respondents, 14 (26%) respectively, had either "0-99" or "500 or more" connections. Almost half of the sample i.e., 27 (49%), spent less than one hour per week on LinkedIn, while a substantial portion. i.e., 23 (42%) spent between one and three hours per week on the site. Thus the LinkedIn usage of the sample was generally moderate.

Contribution of knowledge acquired on LinkedIn to work proficiency

The Likert scale data were converted into the composite score depicted in Table 3.

Table 3: Frequency distribution for knowledge and subject matter proficiency

Score	Absolute frequency	Relative frequency	Cumulative absolute frequency	Cumulative relative frequency
tending to never (0 - 0.25)	2	3.64%	2	3.64%
rarely to never (0.5)	2	3.64%	4	7.27%
tending to rarely (0.75 - 1.25)	12	21.82%	16	29.09%
rarely to sometimes (1.5)	6	10.91%	22	40.00%
tending to sometimes (1.75 - 2.25)	14	25.45%	36	65.45%
sometimes to often (2.5)	7	12.73%	43	78.18%
tending to often (2.75 - 3.25)	7	12.73%	50	90.91%
often to very often (3.5)	1	1.82%	51	92.73%
tending to very often (3.75 - 4)	4	7.27%	55	100.00%
Totals	55	100.00%		

Given that the cumulative relative frequency at "rarely to sometimes (1.5)" was 40%, it is apparent that 60% of the respondents perceived some kind of value from the knowledge acquired from their LinkedIn connections towards their proficiency at work. This substantiates proposition one (P_1) of this study: Knowledge related to a member's subject matter proficiency that is acquired on LinkedIn benefits the member's firm.

Table 4 below shows the cross-tabulation (absolute and relative frequencies (%)) for "number of LinkedIn connections" and "knowledge and subject matter proficiency".

Table 4: Cross-tabulation: Knowledge and subject matter proficiency and number of LinkedIn connections

Number of LinkedIn connections	Hardly perceived value		Perceived value	
0-99	8	14.55%	6	10.91%
100-199	3	5.45%	7	12.73%
200-299	4	7.27%	3	5.45%
300-399	2	3.64%	2	3.64%
400-499	3	5.45%	3	5.45%
500 or more	2	3.64%	12	21.82%

It is evident from the shaded areas in Table 4 that the largest groups of respondents in the categories "hardly perceived value" (8, or 14.55%) and "perceived value" (12,

or 21.82%) belonged to the lowest and highest "number of LinkedIn connections" categories respectively ("0-99" and "500 or more"). This suggests a positive association between "knowledge and subject matter proficiency" and "number of LinkedIn connections".

Contribution of knowledge on LinkedIn to work problem solving

The "knowledge and problem solving" variable was converted to a composite score depicted in Table 5 below.

Table 5: Frequency distribution for knowledge and problem solving

Score	Absolute frequency	Relative frequency	Cumulative absolute frequency	Cumulative relative frequency
tending to never (0 - 0.33)	8	14.55%	8	14.55%
tending to rarely (0.67 - 1.33)	16	29.09%	24	43.64%
tending to sometimes (1.67 - 2.33)	19	34.55%	43	78.18%
tending to often (2.67 - 3.33)	9	16.36%	52	94.55%
tending to very often (3.67 - 4)	3	5.45%	55	100.00%
Totals	55	100.00%		

Given that the cumulative relative frequency at "tending to rarely (0.67 – 1.33)" was 43.64%, it is apparent that 56.36% of the respondents perceived some kind of value from the knowledge acquired from their LinkedIn connections towards their problem solving at work. This substantiates proposition two (P_2) of this study: Knowledge acquired by members on LinkedIn contributes to their firms' problem solving.

LinkedIn usage and problem solving

Table 6 below shows the cross-tabulation (absolute and relative frequencies) for "number of connections" and "knowledge and problem solving".

Table 6: Cross-tabulation of knowledge and problem solving and number of LinkedIn connections

Number of LinkedIn connections	Hardly perceived value		Perceived value	
0-99	7	12.73%	7	12.73%
100-199	4	7.27%	6	10.91%
200-299	4	7.27%	3	5.45%
300-399	2	3.64%	2	3.64%
400-499	4	7.27%	2	3.64%
500 or more	3	5.45%	11	20.00%

It is evident from the shaded areas in Table 6 that the largest groups of respondents, in the categories "hardly perceived value" (7, or 12.73%) and "perceived value" (11,

or 20%), belonged to the lowest and highest "number of LinkedIn connections" categories respectively ("0-99" and "500 or more"). This suggests a positive association between "knowledge and problem solving" and "number of LinkedIn connections". The authors postulate that the more LinkedIn connections a member has, the more likely the member is able to be able to source knowledge that can contribute to problem solving.

Contribution of knowledge on LinkedIn to innovation

The "knowledge and innovation" variable was converted to a composite score depicted in Table 7.

Table 7: Frequency distribution for knowledge and innovation

Score	Absolute frequency	Relative frequency	Cumulative absolute frequency	Cumulative relative frequency
tending to never (0 - 0.25)	9	16.36%	9	16.36%
rarely to never (0.5)	2	3.64%	11	20.00%
tending to rarely (0.75 - 1.25)	13	23.64%	24	43.64%
rarely to sometimes (1.5)	4	7.27%	28	50.91%
tending to sometimes (1.75 - 2.25)	13	23.64%	41	74.55%
sometimes too often (2.5)	2	3.64%	43	78.18%
tending to often (2.75 - 3.25)	10	18.18%	53	96.36%
often to very often (3.5)	0	0.00%	53	96.36%
tending to very often (3.75 - 4)	2	3.64%	55	100.00%
Totals	55	100.00%		

Given that the cumulative relative frequency at "rarely to sometimes (1.5)" was 50.91%, it is apparent that 49.09% of the respondents perceived some kind of value from the knowledge acquired from their LinkedIn connections towards their firms' knowledge and innovation. This finding does not invalidate proposition three (P_3) of this study: Knowledge acquired by members on LinkedIn contributes to their firm's innovation. However there is no overwhelming evidence to confirm it either.

LinkedIn usage and innovation

Table 8 below shows the cross-tabulation (absolute and relative frequencies (%)) for "number of LinkedIn connections" and "knowledge and innovation".

Table 8: Cross-tabulation of knowledge and innovation and number of LinkedIn connections

Number of LinkedIn connections	Hardly perceived value		Perceived value	
0-99	10	18.18%	4	7.27%
100-199	4	7.27%	6	10.91%
200-299	4	7.27%	3	5.45%
300-399	3	5.45%	1	1.82%
400-499	3	5.45%	3	5.45%
500 or more	4	7.27%	10	18.18%

It is evident from the shaded areas in Table 8 that the largest groups of respondents, in the categories "hardly perceived value" (10, or 18.18%) and "perceived value" (10, or 18.18%), belonged to lowest and highest "number of LinkedIn connections" categories respectively ("0-99" and "500 or more"). This suggests a positive association between "knowledge and innovation" and "number of LinkedIn connections".

5. Analytical discussion

The purpose of this study was to investigate the value of knowledge acquired from OSNs from the perspective of members of LinkedIn who reside and work in South Africa. The value of knowledge is as infinite a construct as knowledge itself. The study thus focused on the value of knowledge in three key areas: contribution to the member's firm's subject matter proficiency; contribution to the member's firm's problem solving ability; contribution to the member's firm's knowledge and innovation process.

Analytical point: The value of knowledge to member subject matter proficiency

The results of the analysis demonstrate that P_1 is plausible. The cumulative frequency of the variable "knowledge and subject matter proficiency" shows that a majority of members perceived that their subject matter proficiency was promoted by using the knowledge they acquire on LinkedIn, with benefit to the firm. The plausible association between the LinkedIn usage variables and "knowledge and subject matter proficiency" suggests that P_1 becomes a stronger proposition with a larger number of LinkedIn connections.

Analytical point: The value of knowledge to problem solving

The results of the analysis demonstrate that P_2 is plausible. The cumulative frequency of the variable "knowledge and problem solving" shows that a majority of members perceived that the knowledge they acquired on LinkedIn tended to supplement their firm's problem solving capability. The plausible association between the LinkedIn usage variables and "knowledge and problem solving" suggests that P_2 becomes a stronger proposition with more substantial LinkedIn usage.

Analytical point: The value of knowledge to innovation

The results of the analysis demonstrate that P_3 cannot be considered plausible; however, it cannot be rejected either. The cumulative frequency of the variable "knowledge and innovation" shows that members were somewhat divided in their opinion of the contribution of knowledge from LinkedIn to their firms' innovation. The plausible association between the LinkedIn usage variables and "knowledge and innovation", however, suggests that P_3 may become a stronger proposition with more substantial LinkedIn usage.

The value of knowledge acquired via online social capital

The more people engage with each other, the greater the opportunity for harnessing mutual trust and the greater the opportunity for the norm of reciprocity to operate to induce resource exchange (Aguirre, 2011). Similarly, in online social networks, regular interaction with associates through weak ties builds trust under the norm of reciprocity, particularly interaction that involves the exchange of resources, for example tacit novel knowledge. Tacit novel knowledge can be disseminated and consumed in a brief message exchange via an OSN platform, while OSN platforms remove the barrier of geographical distance and are a discrete means for associates with weak ties to communicate. One can thus speak of the prevalence of online social capital on OSN site.

Donors and recipients of resources are members who are connected to each other on the OSN site, where donors and recipients could have weak or strong ties. The nature of online social capital is based on the same fundamental aspect that characterises traditional social capital, namely the norm of reciprocity, underpinned by trust. A means towards understanding the effectiveness of the resources gained by recipients is to examine the measurements, indicators and dimensions of social capital. Three apparent measurements of social capital for individuals are the size of the social network, the density of the social network, and the frequency of interaction with the social network (Pénard & Poussing, 2010). Traditional social capital theory has been developed largely from the study of traditional social networks.

The benefits of online social capital for organisations, gained via their members, include augmenting and sustaining intellectual capital, increasing creativity and cross-fertilisation, improving the decision-making process using epistemic communities, reducing training costs, identifying customer needs and new product opportunities, and reducing travel costs and addressing problems promptly (Howard, 2010). Motivated by the norm of reciprocity, members from different organisations may share novel knowledge amongst each other. Intellectual capital that is acquired could be sustained when members codify the knowledge in their organisations' knowledge management systems. Creativity and cross-fertilisation are increased through participation in online forums and consumption of broadcasts that are available to members of OSNs.

The knowledge gained is dispersed into the receiving member's organisation when the member utilises the knowledge in the organisation's activities. The existence of online forums within OSNs also provides an accessible source of knowledge that can be used by the organisation in its decision making process. With the knowledge available online and virtually free, and the onus of human capital development being shared by the individual as well as the organisation, organisations may need to invest in the development of their employees in non-traditional ways.

6. Conclusions and recommendations

It can be argued, based on the findings and analytical discussion, that members are not benefiting optimally from the potential knowledge available from their networks in the areas discussed in this study. This could be due, in part, to lethargy in adoption, and, in part, to the attitudes and policies of firms towards open innovation and networking on OSNs.

Adoption of open networking by firms

Firms should realise that traditional closed innovation is not a sustainable strategy (Bigliardi, Ivo Dormio & Galati, 2012; Trott, 2012; Van de Vrande, De Jong, Vanhaverbeke & De Rochemont, 2009). Usage of OSNs such as LinkedIn should be encouraged to help address the issues discussed in this study, namely human capital development, problem solving, and innovation. Firms can embrace OSNs and open networking for knowledge acquisition by formulating policies for their promotion.

Firms' attitudes and policies on OSNs such as LinkedIn

Firms need to formulate and foster official stances and governance on the use of OSNs at work. These measures will remove any ambiguity on the ethical use of OSNs in the context of the firm. More importantly, from the firm's perspective, policies and orientation with respect to OSNs could provide guidance to staff on how to best use OSNs for the purposes of contributing towards achieving a sustainable competitive advantage.

Member initiative

Members of LinkedIn in South Africa may perceive LinkedIn as predominantly a conduit to possibly secure new employment opportunities, because LinkedIn professes to be a hub for recruiting professionals and because recruitment agencies and many firms use OSNs to find and contact potential job candidates. The onus is on members to realise that LinkedIn offers a wealth of potential knowledge via its connections and groups. There are many features of LinkedIn which facilitate knowledge exchange and these are available at low cost, e.g., professional galleries with work examples, photos and video, and the use of slide-share; the targeted search function with advanced people-finder capabilities; and the ability to join groups, which make members and firms more visible.

LinkedIn and its Web 2.0 capability

OSNs such as LinkedIn should look towards developing their site capabilities to further promote Web 2.0 features and to promote knowledge sharing for open innovation. While this process would require some innovation and investment in research and development, the potential benefits could be rewarding for both the OSNs and their members.

Concluding remarks

This study is significant in that it investigated the implications of OSNs, a novel though rapidly proliferating concept, in relation to knowledge acquisition, which is an ageless and infinite concept. The findings are especially significant for firms who are now considering open innovation and networking as means for gaining sustainable competitive advantage. It can be expected that we will see substantial investment into further research on the convergence of the concepts of online social networks, knowledge and novel knowledge, open innovation, and open networking.

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