

Establishing The Moderating Effect of Social Capital on Knowledge Sharing And Social Innovation

Hansa Lysander Manohar

Professor, Dept of Management Studies
College of Engineering Guindy, Chennai, India.

Abstract- *Mention Knowledge tacitness is vital in collaborative innovation, where the transfer of tacit knowledge often requires informal communication methods and face-to-face contact both of which are very difficult without close relationships. Knowledge Complexity denotes a complex system as one that consists of many unique and interacting elements that have equally important effects on the outcomes. Social Capital denotes an interesting perspective from which to explain the effect of interpersonal and interorganizational relationships where shared values and trust operates to have an influence on social innovation in terms of magnitude of change, degree of novelty, or innovativeness. The main objective of the study is to analyse the knowledge sharing between the employees through shared understanding among them that is an influencer for coming out with Social Innovation that has a positive impact on society. The Variables used to measure the knowledge sharing was Knowledge tacitness and Knowledge complexity. In total, 200 individuals were surveyed, and are the employees working in corporate social responsibility activities engaged in social work. Regression Analysis along with hypothesis testing was carried out with the data collected, and interpreted, that social capital had a moderating effect on knowledge sharing with social innovation. the abstract for the article. An abstract is a brief summary of a research article, thesis, review, conference proceeding or any in-depth analysis of a particular subject or discipline, and is often used to help the reader quickly ascertain the paper's purpose. When used, an abstract always appears at the beginning of a manuscript, acting as the point-of-entry for any given scientific paper or patent application.*

Keywords- Knowledge Complexity, Knowledge tacitness, Knowledge sharing, Social Capital, Social Innovation, Social Welfare, Regression,

I. INTRODUCTION

Social innovations seek to improve the well-being of people, communities and society (Mulgan, 2006). Unlike innovations that are driven by the profit motive or competitive business pressures, social innovations are generally triggered by a concern for people and communities rather than a commercial gain. Although there is a clear overlap with social

entrepreneurship (Bornstein, 2003) and social business (Yunus, 2007), especially in referring to innovative activity with a social objective [Austin et al., (2006), p.2], there are also a number of differentiating elements in for example, the collective sharedness of people driving and owning social change. Here, social innovation can be broadly described as the development of new concepts, strategies and tools that support groups in achieving the objective of improved well-being. In this article on social innovation, we examine the growing interest in this phenomenon and try to delineate our boundaries of interest in developing an understanding of what we mean by this new and emerging term. In drawing on some of the ideas and concepts from sociological studies of technology and innovation, we develop a provisional model for making sense of social innovation that integrates the two key knowledge domains of business innovation and social awareness. In this study, we focus on the how knowledge sharing by means of knowledge tacitness and knowledge complexity measures the social innovation with social capital as the moderator.

The social capital framework provides an interesting perspective from which to explain the effect of interorganizational relationships on innovation (Subramaniam and Youndt, 2005) in terms of magnitude of change, degree of novelty, or innovativeness (Gatignon et al., 2002). Social capital is the sum of the actual and potential resources embedded within, available through and derived from the networks of relationships by an individual or social unit (Nahapiet and Ghoshal, 1998). Research on social capital highlights two main dimensions of the interorganizational relationships: the structural dimension and the relational dimension (Granovetter, 1992; Nahapiet and Ghoshal, 1998). The first one refers to the overall pattern of connections between actors, that is, who you reach and how you reach them (density, connectivity and hierarchy are measures of the structural dimension). The second one describes the kind of personal relationships people develops with each other through a history of interactions (respect, trust and friendship are usual aspects included in this dimension).

Social capital approach suggests that factors relevant to the generation of innovation include not only the number of

partners and the structure of the network but also the level of commitment, cohesiveness and trust embedded in the interorganizational relationships (Adler and Kwon, 2002; Mu et al., 2008; Tidd, 1995). Even more, the relational dimension could better explain innovation performance (Moran, 2005), given that innovation mostly depends on the quality of relationships established between the people involved (relational dimension), rather than on the density, connectivity and hierarchy of such relationships (structural dimension). This study focuses on the relational side of social capital which are the factors that effectively function within social group, where there is an interpersonal relationship that fosters shared understanding, values, trust and norms.

II. REVIEW OF LITERATURE

Social Capital and Social Innovation

The literature on innovation broadly discusses the positive effect of interorganizational collaboration on innovation and highlights a number of reasons that explain why these interorganizational relationships stimulate innovation (De Man and Duysters, 2005; Nielsen, 2005). Most of these arguments rest on the potential of interorganizational collaboration to facilitate knowledge-sharing and interactive learning processes among participating firms (Capaldo, 2007). Adler and Kwon (2002) state that the interorganizational network's primary direct benefit involves access to additional sources of information and improved information quality, relevance and timeliness. Social Capital is a network of relationships between people who live and work in a particular society.

Also, these links help firms to acquire new skills and knowledge whereas, innovations in science and technology from which conclude that social innovations are about resolving social challenges and meeting social goals to enhance societal well-being. In examining early sociological concerns with social process and the development of a healthy society, it has been highlighted that there is historical and ongoing importance of social processes to successful innovation and change. Attention is then given to the development of a provisional framework for making sense of social innovation. It is concluded that by calling for further critical reflection and constructive debate on the concept of social innovation and the application of social innovation to improve conditions of people in society.

H1: Social Capital has significant relationship with Social Innovation

Knowledge Tacitness and Social Innovation

The first aspect of knowledge in relation to innovation is the level of its codifiability, or its tacitness (Polanyi, 1966; Winter, 1987). Knowledge codifiability is a construct that captures the degree to which knowledge can be encoded—that is, the extent to which the knowledge can be articulated in documents or software (Zander and Kogut, 1995). Tacit and codified knowledge exist along a spectrum instead of as mutually exclusive categories. At one extreme, knowledge is predominantly codified; at the other extreme, knowledge is predominantly tacit (Polanyi, 1966). Tacit or uncodified knowledge is implicitly acquired and cannot be fully articulated (Gopalakrishnan and Bierly, 2001). It is related to know-how and is based on experience (Nonaka, 1994). Uncodified knowledge is the root of idea generation (Castiaux, 2007). If idea generation in a particular instance is only the reconfiguration of existing explicit knowledge as applied to products, such idea generation should give rise to social innovations (Castiaux, 2007). In contrast, ideas based on tacit knowledge are likely to lead to innovations (Nonaka, 1994) because tacit knowledge provides a basis for ideas with a higher degree of novelty (Brockman and Morgan, 2003). In collaborative innovation, the transfer of tacit knowledge often requires informal communication methods and face-to-face contact (Kogut and Zander, 1993), both of which are very difficult without close relationships. In this context, the relational social capital will be very useful in managing the tacit knowledge that underlies collaborative innovation. When knowledge is explicit, trust might not be critical because the knowledge stands alone and is useful without much interaction between actors. In contrast, tacit knowledge entails insights, intuition, and beliefs that are tightly intertwined with the experience of the knowledge source (Polanyi, 1966). Such knowledge is subjective and difficult to articulate (Nonaka, 1994).

H2: Knowledge Tacitness has significant relationship with Social Innovation

Knowledge Complexity and Social Innovation

Pringle (1951) defines knowledge complexity as the number of parameters needed to define a system. McEvily and Chakravarthy (2002) define a complex system as one that consists of many unique and interacting elements that have equally important effects on the outcomes. Elements are distinct when an individual cannot use the same knowledge to understand them, such that increasing the number of unique elements increases the amount of information that must be processed to understand the system's behavior (McEvily and Chakravarthy, 2002). Gopalakrishnan et al. (1999) define the complexity of an innovation using three characteristics: its difficulty, its intellectual sophistication, and its originality.

Gopalakrishnan and Bierly (2001) and Pelz (1985) associate knowledge complexity with originality, suggesting that knowledge is more difficult to understand when there is uncertainty derived from originality. In this sense, it is important to clarify that originality is a characteristic of knowledge complexity; however, knowledge could be original not being complex (Gopalakrishnan and Bierly, 2001). Such originality will lead to higher levels of novelty. That novelty, if applied to new products, could be translated into social innovations.

Innovations based on complex knowledge will be difficult to transfer outside the company unless there is a tight relationship, especially one that is founded on trust (Hansen, 1999). This difficulty may explain the results of Kogut and Zander (1993) work. They find that, because of the uncertainty involved, as innovations became more complex, firms tend to confine their knowledge within their own internal departments.

H3: Knowledge Complexity has significant relationship with social innovation

The effect of Knowledge tacitness and complexity on social innovation with social capital as a moderator

Communication, coordination, and multidisciplinary efforts between and within firms are key elements to cultivating the level of trust necessary for social capital and superior performance. However, the burden of these additional tasks and efforts may decrease the rate of innovation. Kotabe and Swan's (1995) research suggests that cooperating firms' efforts to achieve other benefits from the alliance negatively impact the innovativeness of their products. Despite the advantages of social capital, some authors have discussed the dark side of strong interorganizational relationships that presents obstacles to innovation. The main reason is that such relationships lock firms into a narrow network, making them dependent on inspiration from only a small number of external sources of creativity (Capaldo, 2007). Similarly, Collinson and Wilson (2006) suggest that existing external connections with preferred suppliers and customers within keiretsu structures, as well as close relationships with existing R&D partners, may negatively impact Japanese firms' level of strategic flexibility. Given that the mere existence of strong cooperation agreements does not guarantee that innovative activities will yield positive results, the knowledge framework could add an interesting dimension to the study of interorganizational cooperation and innovation. Gopalakrishnan et al. (1999) analyse the influence of knowledge and its characteristics or typologies on innovation. They report that knowledge exerts a positive influence on the probability of innovating. Smith et al.

(2005). knowledge (tacitness and complexity) on the degree of change that the innovation will incorporate, that is, its social (Diaz-Diaz et al., 2006).

H4: Social Capital can strengthen the influence of knowledge tacitness towards social Innovation

H5: Social Capital can strengthen the influence of knowledge Complexity towards Social Innovation.

III. MATERIALS AND METHODS

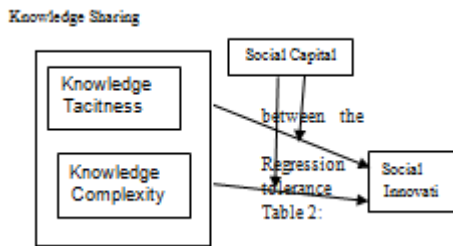
Samples

Descriptive research Method were used and Purposive Sampling technique were employed in this analysis, were samples was collected aimed at understanding how Knowledge tacitness and knowledge complexity can result in social Innovation with the moderation effect of social capital. This is measured from individuals who are working with corporate social responsibility activities engaged with a social purpose. In total, 400 individual were provided the opportunity to take the survey. Data are collected from individuals, those who are engaged in corporate social responsibility activities for social welfare purpose. Such responses provided sufficient data and was used to evaluate data in response to the research questions (Fosnacht et al. 2017; Gagne and Hancock 2006). Individual's in the sample were also diverse by way of gender, race, and major field of study.

Measures

This study has used three independent variables are (Knowledge complexity, Knowledge tacitness and Social capital) and one dependent variable (Social Innovation) given in Figure 1. These variable were measured using the 5 point Likert scale (1= strongly disagree to 5= strongly agree). Details of the survey instrument measures are discussed below: social innovation were measured by the 6 items scale sample item are "Social capital actively carries out its work on developing new affordable social oriented products/service/ Technology". The Cronbach alpha for the scale reliability was 0.859. Knowledge tacitness was measured by the 5 item scale. The Cronbach alpha for the scale reliability was 0.726. Knowledge Complexity was measured by the 5 item scale. The Cronbach alpha for the scale reliability was 0.764. Social Capital was measured by the 5 item scale. The Cronbach alpha for the scale reliability was 0.748

Figure 1: Proposed Framework: Social Capital moderating Knowledge sharing and Social innovation



IV. RESULTS AND DISCUSSION

Correlation

Correlation is a statistical measure that indicates the extent to which two or more variables fluctuate together. Correlation (Pearson, Kendall, Spearman) is a bivariate analysis that measures the strength of association between two variables and the direction of the relationship. A positive correlation value means that the variables concerned increase or decrease in parallel as one increases or decreases so does the other whereas a negative correlation value indicates that as one variable increases the other decreases, or vice versa. Thus, the Table 1 below shows Karl person coefficient of correlation with the reliability coefficients and correlations among the major study variables. The correlations between the study variables were in the expected direction (positive correlation) and statistically significant.

Table 1- Karl Pearson Coefficient of Correlation

Variables of Interest	KT	KC	SC	SI
Knowledge tacitness	1			
Knowledge Complexity	.638*	1		
Social Capital	.584*	.547**	1	
Social Innovation	.645*	.684**	.654**	1

Correlation coefficients are significant at *p < .01; and **p < .001

Test of Multicollinearity:

Multicollinearity is the occurrence of high intercorrelations among independent variables in a multiple regression model. Multicollinearity can lead to skewed or misleading results when a researcher or analyst attempts to determine how well each independent variable can be used most effectively to predict or understand the dependent variable in a statistical model. Thus, Above the Correlation table shows that Correlation between two independent variables are lower – Moderate.(0.3 – 0.7). There is no

existence of Multicollinearity between the variables. Results are met the underlying Assumptions of Multiple Regression with Normally distributed data tolerance and VIF are below as shown in Table 2:

Table 2-Coefficients

Model	Collinearity Statistics	
	Tolerance	VIF
KNO TAC	.574	3.893
KNO	.654	4.231
CMLX		
SC	.563	5.132

Regression

Table 3 - Knowledge Tacitness , Knowledge Complexity and Social Capital Regressed on Social Innovation

Independent Variable	Social Innovation			
	Beta	t-value	Sig	VIF
Knowledge Tacitness	0.534	2.030	.034	3.532
Knowledge Complexity	0.645	2.167	.014	3.654
Social Capital	0.594	2.278	.006	3.167
R Square				.602
Adjusted R Square				.525

Overall our model showed a good fit to the data as evidenced by the R-squared (R²). It is a statistical measure that represents the proportion of the variance for a dependent variable that's explained by an independent variable or variables in a regression model. It may also be known as the coefficient of determination. Whereas, the adjusted R-squared compares the descriptive power of regression models two or more variables that include a diverse number of independent variables known as a predictor. Every predictor or independent variable, added to a model increases the R-squared value and never decreases it. Thus dependent variable of Intent to use has Adjusted R Square 0.525 with significant p value (p<0.05)

It explained the results of multiple regression is an extension of simple linear regression. It is used when we want to predict the value of a variable based on the value of two or more other variables. The variable we want to predict is called the dependent variable (or sometimes, the outcome, target or criterion variable) Here, predicted variables are Knowledge tacitness (beta =0.534, p<0.05), Knowledge Complexity (beta = 0.645, p<0.05), Social Capital (beta = 0.594, p<0.05). Thus,

social innovation is found as significantly predicted in the organisation as seen in Table 4.

Table 4- Acceptance/ Rejection of Hypothesis

Hypothesis	Supported/Not Supported
H1: Social Capital has significant relationship with Social Innovation	Supported
H2: Knowledge Tacitness has significant relationship with Social Innovation	Supported
H3: Knowledge Complexity has significant relationship with social innovation	Supported

Moderation Analysis – Multiple Regression Analysis Testing Results

Table 5 - Knowledge Tacitness , Knowledge Complexity Regressed on Social Innovation with Moderating effect of Social Capital

Independent Variable	Social Innovation	
	Beta	Sig
Knowledge Tacitness	0.744	.014
Knowledge Complexity	0.510	.054
Social Capital	0.617	.006
KT_SC	0.069	0.543
KC_SC	0.234	.047
R Square	0.798	
Adjusted R Square	0.654	

The calculation results shown in Table 5 show that the value of β for the interaction variable between Knowledge Complexity and Social Capital 0.617 with a significance level of 0.047 lesser than 0.05. This shows that social capital is able to moderate the effect of Knowledge Complexity with social Innovation. Whereas, interaction variable between Knowledge Tacitness and Social Capital is 0.069 with significance level of 0.543 greater than 0.05. This shows that social capital not able to moderate the effect of Knowledge Tacitness with social Innovation. The results of this test are consistent with the research of Sutrisno (2011) and Firmandari (2014), starting with the point of Knowledge tacitness between the organisation like in collaborative innovation, the transfer of tacit knowledge often requires informal communication methods and face-to-face contact (Kogut and Zander, 1993), both of which are very difficult without close relationships thus, Social Capital will not effectively moderate between Knowledge tacitness and Social Innovation. Whereas, Pringle (1951) defines knowledge complexity as the number of parameters needed to define a

system. McEvily and Chakravarthy (2002) define a complex system as one that consists of many unique and interacting elements that have equally important effects on the outcomes. Elements are distinct when an individual cannot use the same knowledge to understand them, such that increasing the number of unique elements increases the amount of information that must be processed to understand the system's behavior (McEvily and Chakravarthy, 2002). Gopalakrishnan et al. (1999). Thus, Table 6 reveals that the results shows that Social Capital effectively Moderates between the Knowledge Complexity and Social Innovation.

Table 6-Acceptance/ Rejection of Hypothesis

Hypothesis	Supported/Not Supported
H4: Social Capital can strengthen the influence of knowledge tacitness towards social Innovation	Not Supported
H5: Social Capital can strengthen the influence of knowledge Complexity towards Social Innovation.	Supported

V. CONCLUSION

The Study result shows that Social Capital significantly moderates Knowledge Complexity and Social Innovation. Knowledge Tacitness was not effectively predicting the Social Innovation when social capital is the moderator. Thus, the results shows that the employees in the organisation are likely to share their knowledge when there are many number of unique elements that leads to sharing on social innovation. Significantly with Social Capital as the moderator and though there is effective social interaction social innovation is meagre which is due to lack of mutual understanding and trust. This study directly examines the relationship among knowledge tacitness and social innovation that includes respectful interaction, mindful organizing, and performance which is consistent with the research work of Timothy J. Vogus, (2018). Hence it is recommended that reverential communication and mindful organizing triggers social capital for social innovation.

REFERENCES

- [1] Adler PS, Kwon SW., “Social capital: prospects for a new concept.”, Acad Manage Rev 27:17–40, 2002;
- [2] Brockman BK, Morgan RM., “The role of knowledge in new product innovativeness and performance”, DecisSci34(2), pp385–419, 2003.
- [3] Calantone RJ, Chan K, Cui AS.” Decomposing product innovativeness and its effects on new product success. “, J Prod Innov Manage;23:408–21, 2006.

- [4] Capaldo A, "Network structure and innovation: the leveraging of a dual network as a distinctive relational capability", *Strateg Manage J* 28, pp585–608, 2007;.
- [5] Cardinal L, "Technological innovation in the pharmaceutical industry: the use of organizational control in managing research and development", *Organ Sci* 12, pp19–36, 2001.
- [6] Castiaux A, "Radical innovation in established organizations: being a knowledge predator". *J Eng Tech Manage* 24(1–2), pp36–52, 2007..
- [7] Chang MH, Chen YC, Hung SC. "Social capital and creativity in R&D project teams." *R&D Manage*;38:21–34, 2008.
- [8] Cohen J, Cohen P, West SG, Aiken LS. "Applied multiple regression/correlation analysis for the behavioral sciences." 3rd ed. USA: Lawrence Erlbaum Associates Publishers; 2003.
- [9] Collins C, Clark K., "Strategic human resource practices, top management team social networks, and firm performance: the role of human resource practices in creating organizational competitive advantage." *Acad Manage J*;46(6), pp740–51, 2003.
- [10] Collinson S, Wilson D, "Inertia in Japanese organizations: knowledge management routines and failure to innovate" *Organ Stud* 27(9):57–87, 2006;.
- [11] De Man A, Duysters G., "Collaboration and innovation: a review of the effects of mergers, acquisitions and alliances on innovation. *Technovation*" 25:377-387, 2006.
- [12] Diaz-Diaz NL, Aguiar-Diaz I, De Saa-Perez P. "Technological knowledge assets in industrial firms.", *R D Manage* 36(2):189–203, 2006.
- [13] Duysters G, de Man A., "Transitory alliances: an instrument for surviving turbulent industries?", *R&D Manage* ,33:49–58, 2003.
- [14] Edquist C. "Systems of Innovation". London: Pinter; 1997.
- [15] Faems D, Van Looy B, Debackere K. "Interorganizational collaboration and innovation: toward a portfolio approach." *J Prod Innov Manage*;22:238–50, 2005.
- [16] Gatignon H, Xuereb JM. "Strategic orientation of the firm and new product performance" *J Mark Res* 34(1):77–90, 2005.
- [17] Gatignon H, Tushman ML, Smith W, Anderson P. "A structural approach to assessing innovation: construct development of innovation locus, type, and characteristics. *Manage Sci*;48(9):20, 2002.
- [18] Gerpott TJ. "Successful integration of R&D functions after acquisitions: an exploratory empirical study". *R&D Manage* 25:161–78, 1995.
- [19] Goes J, Park SH. Interorganizational links and innovation: the case of hospital services. *Acad Manage J*;40(3):673–96, 1997.
- [20] Gopalakrishnan S, Bierly P. "Analyzing innovation adoption using a knowledge-based approach." *J Eng Tech Manage* 18(2):107–30, 2001;.
- [21] Gopalakrishnan S, Bierly P, Kessler EH. "A reexamination of product and process innovations using a knowledge-based view". *J High Technol Manage Res*;10(1):147–66, 1999.