THE EFFECT OF SOCIAL CAPITAL AND KNOWLEDGE SHARING ON FIRM PERFORMANCE

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Abstract
The aim of this paper is to investigate the impact of trust and knowledge sharing (KS) on firm performance in terms of its ability to reduce operating costs. A research model was developed based on prior KS and performance studies. A survey was administered to a sample of IT firms in Jakarta and 111 usable responses were collected. A Partial Least Square - Structural equation modeling (PLS-SEM) was employed to test the research model. Trust significantly was found to knowledge sharing but trust has no significant effect on performance, meanwhile knowledge sharing has a significant effect on performance. in this study found that knowledge sharing mediates the influence of trust on performance. The sample of start-up technology firms in Jakarta might limit the generalization of the findings. Nonetheless, this study takes its lead from and extends prior research, thus providing a deepened understanding of the role of KS in organizational settings. Top manager of firm can enhance firm performance by creating a conducive climate, for example by enhancing mutual trust between personnel, will make knowledge-sharing activities an asset that competitors can not imitate.This is one of the first papers to examine how trust contributes to firm performance through the mediation KS. It will add significant value for organizations trying to enhance their performance though KS practices.
Keywords: Trust, Knowledge Sharing, Firm Performance.

Introduction

Organizational structure affects firm performance, however it does not exert a direct influence, but has an indirect influence through competitive strategy. The resource-based view (RBV) may explain the sources of sustainable competitive advantage better than an externally focused orientation. RBV emphasizes the internal attributes and allows researchers to reframe the relationships between strategy and structure by analyzing the organizational structure as a valuable resource and a source of competitive advantage(Pertusa et al, 2010).

In today's business world, knowledge is considered as a vital resource in formulating appropriate competitive strategies so as to ensure successful performance of firms. As knowledge sharing is thought to be a powerful source of gathering knowledge and creating competitive advantage, it is desirable for companies to adopt an environment where proper knowledge flow can be assured. Generally speaking, knowledge-sharing activities are dependent on organizational culture and structure.

Knowledge Sharing (KS) is one of component of Knowledge Management (KM) which it's focused more on relationships among co-workers in promote information exchange and learning (Mcinerney & Mohr, nd). Many organization have implemented knowledge sharing as a day to day practical in order to achieve the organization's goal (Penuel & Cohen, 2003).

The concept of knowledge sharing views knowledge less as a thing and more as a process that evolves from the ongoing iteration of conversation, reflection, questioning, and absorbing new knowledge, all filtered through a base of individual experience (Nonaka & Takeuchi, 1995). Howewer, succsess in applying knowledge sharing depend on organization's climate, in order knowledge and information can be shared easily, comfortably, and openly, comfortably, and openly, though (Mcinerney & Mohr, nd).

Trust and trustworthiness as key elements in creating a favorable climate for knowledge sharing efforts (Mcinerney & Mohr, nd) and has been explored by many of researchers including information scientists (Huotari & Iivonen, 2004), philosophers (Bowie, 1999), and management consultants, (Shaw, 1997). All of whom find that trust is an antecedent for learning related to information exchange, especially in organizations that depend on virtual workplaces.

Ttrust between the firm and both its stakeholders and investors, built through investments in social capital, pays off when the overall level of trust in corporations and markets suffers a negative shock. It was proved from research conducted by Lins et al (2017) that firms with high social capital, measured as corporate social responsibility (CSR) intensity, had stock returns that were four to seven percentage points higher than firms with low social capital during the 2008-2009 financial crisis. High-CSR firms also experienced higher profitability, growth, and sales per employee relative to low-CSR firms, and they raised more debt. Organizations deeply understand the importance of building trust between co-workers, one of the benefits is increasing the level of knowledge sharing between co-workers (Rutten, 2016).

However, the extent to which social capital and trust impact firm performance is a relatively unexplored area in the literature. Previous studies have not examined level of trust and its effect on the level of knowledge sharing and start-up business performance.The purpose of this paper is to test empirically the role of trust within the start-up company in creating a conducive climate for knowledge sharing and its impact on organization performance.

The Efect of Trust onFirm Performance

Trust defined as "the expectation that another person (or institution) will perform actions that are beneficial, or at least not detrimental, to us regardless of our capacity to monitor those actions...so that we will consider cooperating with him (the institution)." (Sapienza and Zingales (2012). the sense of trust makes us willing to cooperate (Fukuyama, 1995) and The existence of trust lowers the cost of control (Dasgupta, 1988; Rijsdijk, 2016), flexibility, conflict resolution, cooperative behaviour, and value creation (Rijsdijk, 2016). Trust is based on a perception of the probability that other agents will behave in a way that is expected and benevolent. In the entrepreneurial context, a manager or company owner expects a business partner or employee to act in their own interest, or at least to take such interests into account (Rijsdijk, 2016).

This study adopt the conceptualization of Ganesan (1994) who define trust as the confidence in an exchange partner's reliability and integrity. The definition of trust proposed here reflects two distinct components: (1) credibility, which is based on the extent to which the top managemer's believes that the partner has the required expertise to perform the job effectively and reliably and (2) benevolence, which is based on the extent to which the top manager's believes that the partner has intentions and motives beneficial to the firm when new conditions arise, conditions for which a commitment was not made.

There is no overall agreement as to the evidences of trust's effect on firm performance in buyer-supplier relationships. Several research which investigated relationship between trust and firm performance are roughly categorized as, first no relationship between trust and firm performance (Aulakh et al., 1996; Fryxell et al., 2002, Nielsen and Nielsen, 2009,), second negative relationship (McEvily et al., 2003; Krishnan et al., 2006; Patzelt and Shepherd, 2008,Rijsdijk, 2016), and third positive or inverted U shaped relationships (Dyer and Chu,2003; Tzafrir, 2005; Fink and Kessler, 2010; Gaur et al., 2011; Wang et al., 2011).

H1: There is positive relationship between trust and the the firm's cost reduction performance

The Effect of Trust on Knowledge Sharing

Knowledge sharing refers to the activity through which knowledge in various forms is transferred or exchanged from one person, group or organization to another (McAdam et al., 2012). KS term is often interchangeable with knowledge transfer (KT), even though both have operational differences.

KS focuses more on the process of knowledge collection and diffusion, and contributes to knowledge exchange, application and creation, and ultimately, the knowledge-based capability within the organization (Wang and Wang, 2012). In an organization, KS as a key factor for preserving its valuable heritage, learning new techniques, solving problems, creating core competencies, initiating new undertakings, and ultimately gaining competitive advantage (Hsu, 2008).

Rutten (2016) investigated the differences in the level of knowledge sharing between co-workers in high trust versus low trust situations. The higher the level of trustleads to a high level of knowledge sharing, vice versa. This study also showed that a lower level of trust leads to less knowledge sharing.

**The Effect of knowledge sharing on performance**

Based on knowledge based view (KBV), knowledge which is consists of explicit and tacit, constitutes the primary resource for firms to gain and sustain a competitive advantage (Reus et al., 2009), and firms are seen as "knowledge integration" institutions (Grant, 1996). While most explicit knowledge and certain tacit knowledge can be retained by an organization for value creation and value extraction, it is knowledge sharing or integration that combines scattered knowledge to enhance innovation, creativity, and ultimately achieve performance gains (Gao et al., 2009). Many current knowledge sharing practices, such as training and development programs, IT systems, reports and official documents, and cross-function teams, are good examples of knowledge integration in that they combine knowledge across a broad spectrum to enhance the quality of products and services, increase responsiveness to customer needs, strengthen innovation capability, and improve firm performance (Wang and Wang, 2012). To create dynamic capabilities for competing in the marketplace, firms must integrate individuals' specialized knowledge (Grant, 1996) or tacit knowledge (Nonaka, 1994).

Based on the above discussion, we therefore propose the following of KS:

H2. There is positive relationship between trust and knowledge sharing. The organization with high quality level of trust will increase the level of knowledge sharing activities in organization.

H3. There is positive relationship between knowledge sharing and firm's cost reduction performance

Conceptual Framework
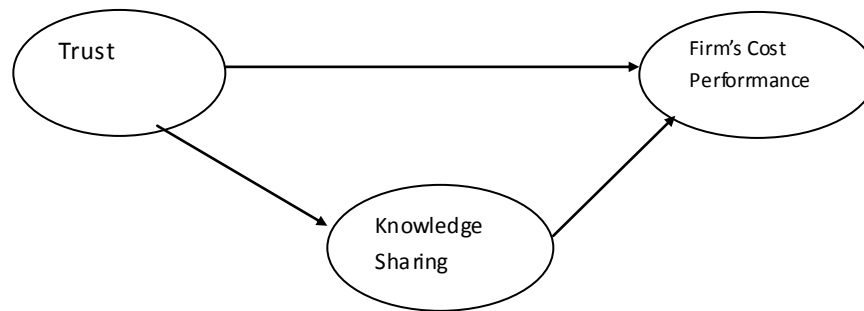
Research methodology

We adopted a survey method to test the hypotheses. Surveys allow for precise measurement of theoretical constructs, quick data collection, rigorous data analysis using advanced, statistical techniques, and quantitative identification of complex relationships (Gable, 1994)

Data collection

A random sample was drawn from information technology firms in the Jakarta province (state capital of Indonesia).We had three sampling criteria: the firms had to be (1) at least 1 years; (2) has an official legal entity; (3) field of business on IT in Jakarta. The reason behind choose IT sector firm because firms in this sector seriously encourage KS and believe that it could improve operational or financial performance, thus offering an appropriate setting for examining the relationship between KS and performance. The top managers represent the best source for firm-level information, we directed our questionnaires to the CEO and general manager or senior manager (each company received two questionnaire).

A total of 350 firms were approached via mail or email. Some firms did not respond, and some firms' data were discarded because of incomplete questionnaires. Finally, 140 completed surveys were collected. After removing the obviously invalid responses (e.g. selecting the same answer for all questions), 111 were retained for analysis, showing an effective response rate of 31 percent.

Measurement

The measurement items were reused or adapted from existing scales in the literature to ensure reliability and content validity of latent variables. Firm's cost leadership performance was measured through three items. Two items was adapted from Prajogo (2007) and one item were developed by researcher. Trust and knowledge sharing both were measured through five items which adapted from Wang et al, (2014). The detailed measurement items are shown in the Appendix.

Data were processed by using Smart PLS 2.0. Correlation based was chosen over the covariance-based structural equation modeling approach because PLS is prediction-oriented (Chin, 1998) and, thus, can serve our purpose well (i.e. to investigate whether trust and knowledge sharing can explain and predict FP). The advantage of PLS isthe data processing does not make assumptions about the distribution pattern of underlying data and is less demanding on sample size (Chin, 1998).

We calculate by using PLS algorithm with maximum iteration limit of 10.000 with total sample 111. Table 1a shows the outer loading factor of each indicator to its latent variables. The output results show the loading factor for CL1 is below 0.5, therefore this indicator will be removed from the model of structural equation.

Table 1a, b. Outer Loading

Item*	1a				1b		
	KS	Firm's Cost Performance	Trust		KS	Firm's Cost Performance	Trust
CL1		0,417384				-	
CL2		0,847134				0,861211	
CL3		0,911140				0,929528	
KS1	0,847373				0,847373		
KS2	0,881942				0,881942		
KS3	0,865303				0,865303		
KS4	0,864867				0,864867		
KS5	0,885162				0,885162		
TR1			0,547099				0,547099
TR2			0,837795				0,837795
TR3			0,883622				0,883622
TR4			0,714081				0,714081
TR5			0,810274				0,810274

*see appendix-1 for detail of questions.

Subsequent data processing shows the outer loading factor for CL2 and CL3 increases after CL1 is removed from the structural equation model.

Table 2. Discriminant Validity Test (Cross Loading)

	KS	PERFORMANCE	TRUST
CL2	0,322158	0,861211	0,274422
CL3	0,440574	0,929528	0,263405
KS1	0,848397	0,407626	0,634959
KS2	0,881469	0,427208	0,694472
KS3	0,865289	0,338577	0,614633
KS4	0,864583	0,270935	0,526745
KS5	0,884866	0,414438	0,547143
Tr1	0,342095	0,199693	0,547780
Tr2	0,534650	0,050029	0,837202
Tr3	0,663692	0,281004	0,882840
Tr4	0,448038	0,326394	0,714543
Tr5	0,628062	0,260131	0,810797

Validity test results by using cross loading indicates that all indicators have a stronger correlation to its latent variables, and there is no indicator which has a stronger correlation to other latent variables. As well as the AVE root for each construct is greater than the correlation between the other construct constructs (Table 3).

Discriminant validity. This indicates the extent to which a construct differs from others. When assessing discriminant validity, AVE should be greater than the variance shared between the construct and other constructs in the model (i.e. the squared correlation between two constructs) (Barclay et al., 1995). The manifest variables of our study fulfill this condition because the diagonal elements of Table 3 are greater than the off-diagonal elements in the corresponding rows and columns.

Table 3. Discriminant Validity Test (Square Root AVE vs Correlation) and Reliability Test

Latent Variable	Discriminant Validity test				Reliability test	
	AVE	KS	Firm's Cost	Trust	Composite Reliability	Cronbachs Alpha
KS	0,755196	**0,86902***	-	-	0,939102	0,919286
Firm's Cost Performance	0,802853	0,433817	**0.896021***	-	0,890506	0,760153
Trust	0,589668	0,701520	0,297754	**0,767898***	0,875201	0,820167

*$\sqrt{AVE}$ Score

Reliability test using composite reliability and cronbachs alpha shows that all values are above 0.7, thus it can be concluded that the indicators used in this structural model have met the requirements of validity and reliability.

Descriptive statistics

Of the 135 questionnaires collected, 111 questionnaires were eligible for further testing. About 54 percent of the sample is a firms with a number of personnel above 50 and the rest were firms with a number of personnel under 51 people. The test results show no bias on the average score of responses given between firms with personnel above 50 and below 50. therefore the merging of these two groups of companies into a single SEM model can be done to distinguish between small and large companies.

Table 4. Sample Profile

Number of personnel	Frequency	Percentage
▪ < 5	6	5,4
▪ 5 – 10	12	10,8
▪ 11-50	33	29,7
▪ 51-100	33	29,7
▪ >100	27	24,3
Position in the company		
▪ CEO	18	16,2
▪ Director	30	27,0
▪ Senior manager	63	56,8
Core Business		
IT Services	18	16,2
Software developer	75	67,6
Hardware producer	12	10,8
Others	6	5,4

Most of the respondents were senior manager (56,8%). This is because the Director and CEO is more difficult to meet at the time of field survey, so the process of filling the questionnaire was represented to the firm's senior manager. Table 5 summarizes the responses of respondents from 13 questions in the questionnaire. the majority of respondents have responses above the agreed scale, except for the TR1 question whose average score is below agreed (3.62). This indicates that trust, knowledge sharing and cost reduction performance in the sample firms have achieved good results.

Table 5. Descriptive Statistic

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
TR1	111	2,00	5,00	3,6216	1,10416
TR2	111	2,00	5,00	4,1081	,92787
TR3	111	2,00	5,00	4,1351	,87891
TR4	111	1,00	5,00	4,0270	,94829
TR5	111	2,00	5,00	4,2162	,84644
KS1	111	2,00	5,00	4,0000	,90453
KS2	111	2,00	5,00	4,1892	,73254
KS3	111	2,00	5,00	4,1081	,83504
KS4	111	2,00	5,00	4,0811	,91587
KS5	111	2,00	5,00	4,1351	,81449
CL1	111	1,00	5,00	4,0811	,78781
CL2	111	3,00	5,00	4,2432	,54299
CL3	111	3,00	5,00	4,0541	,61552
Valid N (listwise)	111				

Findings and Result

The next stage is an inner model evaluation to test the effect of latent variables according to the developed SEM model

Table 4. T-Statistic and Path Coefficient

Latent Variable	t-statistic	Path Coefficient	Result
Trust → Performance	0,178	-0,0117	**Reject H1**
Trust → KS	18,924	0,554	**Accepted Ha**
KS → Performance	6,387	0,745	**Accepted Ha**

In table 4 we can see that Trust has a coefficient value of -0.0117 with a value of t-statistics 0.178.it can be concluded that trust does not have a significant effect on the company's ability to reduce operational costs, thus we reject H1 and accepted H0, there is no positive relationship between trust and organizational performance.

The path coefficient from trust to KS of 0,544 has a t-statistic value of 18.924 ($\alpha \le 5\%$), It can be concluded that trust has a significant influence on KS, thus we accepted H2:There is positive relationship between trust and knowledge sharing. The organization with high quality level of trust will increase the level of knowledge sharing activities in organization.

KS has a path coefficient value of 0.745 with a t-statistic value of 6.387. it can be concluded that KS has a significant influence on the operational performance of the company in reducing costs. Thus we accepted H3; Knowledge sharing is positively associated with firm performance. Figure 1 shows the results of the path coefficients of the outer model and the inner model.

Figure 1. Path Coefficient
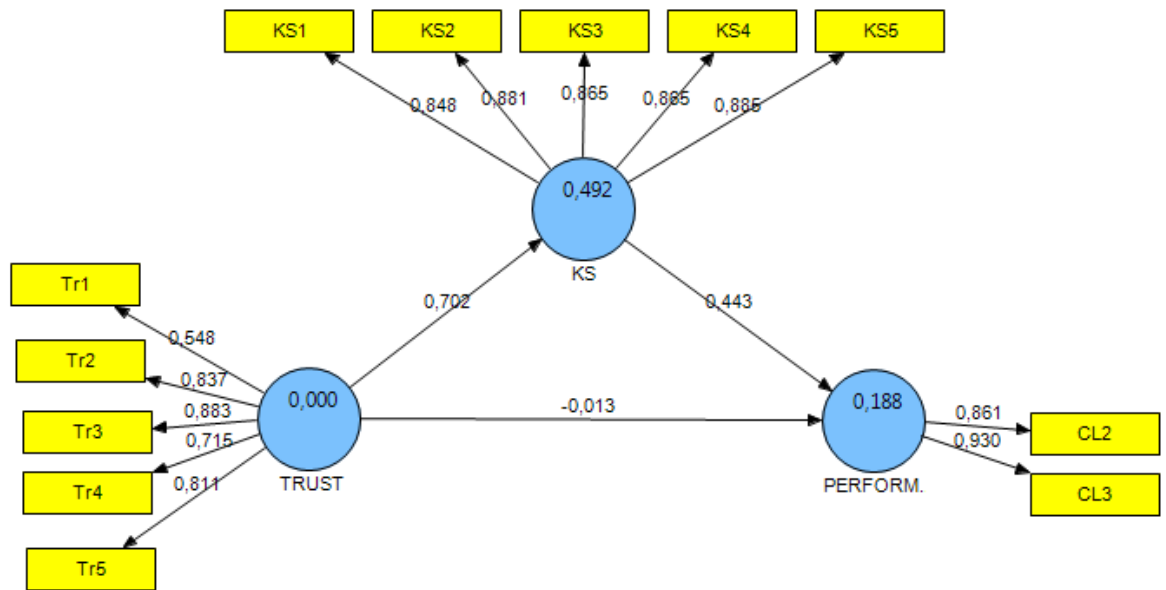
Discussion

This study emphasizes the importance of knowledge sharing as a mediating variable which connects social capital on firm performance. Empirical testing shows that social capital does not have a direct effect on the firm performance in terms of lower operating costs. Meanwhile, strong social capital among personnel within the company will create a positive climate within the company to share knowledge.

For management practitioners who are concerned with the value of trust, our study presents several intriguing insights. First, the mediating role of KS suggests that firms should do more than merely increase trust between personnels. They have to clearly understand the effects of trust in building a supportive climate for knowledge sharing. Trust and knowledge sharing as two critical intangibles existing between firms that directly and indirectly influence performance metrics. Trust and knowledge sharing emerge as variables to be explicitly managed to improve performance.

Findings in this study are in line with Cheng (2008) that knowledge sharing plays a perfect mediating role between trust and firm performance of Chinese firms. Our research have the same main findings as follows: (1) the level of knowledge sharing within a company is determined by the level of trust; (2) trust does not directly affect the performance of the firms; (3) the firm's performance in reducing costs is determined by knowledge sharing (4) knowledge sharing plays a mediating role between trust and firm performance.

Conclusion

In today business environment where organization are designed to be more smaller and flexible, a firm which are able to develop trusting relationship within its personel will create a conducive climate within the personel in the company in knowledge sharing. The result of this research strongly support the positive relationship between the trust, knowledge sharing and firm performance.

Knowledge sharing is crucial for success of companies operating in turbulent and uncertain environments. Knowledge sharing need to be introduced at a rapid pace while at the same time companies have to absorb market information and integrate knowledge during information technology application. These findings emphasize the important role of knowledge sharing that are flexible strategic choices to manage the uncertainty in a firm's information technology application.

Trust is an antecedent to knowledge sharing. By increasing trust as an intangible asset development strategy for the firms will create a more lasting competitive advantage. The success of reducing operational cost depends on the ability of the firm to foster trust and promote knowledge sharing leads to effective firm performance.

In this study, it was confirmed that knowledge sharing plays a role as a mediator between trust and firm performance, while in some previous studies have not involved the influence of mediation variables in testing the effect of trust on performance, except that has been done by Cheng (2008). The difference between this study and the Cheng (2008) is on the performance benchmarks measured by the performance of the firms in lowering costs.

In some studies, trust has a positive effect on company performance, in contrast to the findings in this study in which trust does not have a linear effect on performance. A study can not escape the limitations of results, findings from this study still leaves some questions that can be continued in further research, including: if trust doesn't have a linear effect with performance, may be it has a quadratic effect on performance.

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Appendix

Firm's performance(CL)

CL1. Cost management of our company is better than that of key competitors.

CL2. We have no difficulty in reducing operational costs.

CL3 We have Cost centres and fixing standard costs are used

Trust(Adopted from Wang et al, 2014)

TR1. This resource's representative has made sacrifices for us in the past.

TR2. This resource's representative cares for us.

TR3. In times of shortages, this resource's representative has gone out on a limb for us.

TR4 This resource's representative is like a friend.

TR5 We feel the resource's representative has been on our side.

Knowledge Sharing (Adopted from Wang et al, 2014)

KS1. Employees in my organization frequently share existing reports and official documents with members of my organization.

KS2. Employees in my organization frequently share reports and official documents that they prepare by themselves with members of my organization.

KS3. Employees in my organization frequently collect reports and official documents from others in their work.

KS4. Employees in my organization are frequently encouraged by knowledge sharing mechanisms.

KS5. Employees in my organization are frequently offered a variety of training and development programs.