

Exploring the Factors of Inter-Organizational Knowledge Sharing

Ying-Hueih Chen, Jyh-Jeng Wu, Shu-Hua Chien, Yui-Chuin Shiah

Abstract—Interorganizational knowledge sharing is the major driving force to maximize the operational benefits across supply chain. Trust is considered as the key to facilitate knowledge sharing. This research proposes shared values and relational embeddedness as antecedents of interorganizational trust. Survey based on managers in major industrial parks in Taiwan confirm that trust is enforced when organizations develop shared values and formed social relational embeddedness. Trust leads to interorganizational knowledge sharing. This research has theoretical and practical implications.

Keywords—Shared Goal, Relational Embeddedness, Trust, Knowledge Sharing.

I. INTRODUCTION

INTERORGANIZATIONAL knowledge sharing and leverage is a strategic means achieving competitive advantage in rapid changing business environment [1]. Knowledge sharing refers to the core process in leveraging information assets across the business partners with the purpose to identify the emerging opportunities in marketplace or capture the business value [2]. Knowledge sharing across the business partners allows the business entities to orchestrate the information assets and enhance the operational efficiency.

Scholarly literatures have investigated interorganizational knowledge sharing from diverse aspects. For example, Boer et al. [3] identify communal sharing, authority ranking, equality matching, and market matching as four relational aspects of knowledge sharing. Boer et al. [3] argue that effective knowledge sharing take place when the sharing entities use similar relational model with appropriate incentive mechanisms and knowledge management systems. Ke and Wei [2] highlight the strategic importance of interorganizational trust and firm's power in facilitating knowledge sharing across the supply chain. Panteli and Sockalingam [4] explore the central issue of knowledge sharing and point out that trust is the cornerstone of knowledge-based collaboration. While these literatures identify major types and key issues of knowledge sharing, often overlooked is how and why organizations develop trust and take place knowledge sharing.

Barden and Mitchell [5] argued that social embeddedness is a major predictor that shaped the economic behavior among and between the trading entities. Morgan and Hunt [6] examined antecedents and consequences of interorganizational trust and suggested that developing shared value is helpful in terms of constructing homogenous symbol systems and behavior logics. In this paper, we adopt the social exchange perspective and explore the relational factors leading to inter-organizational knowledge sharing. Our context is the supply-chain. Considering knowledge sharing is a pattern of interorganizational interaction and outcome of social relationships, this research proposed relational embeddedness and shared value as major antecedents of interorganizational trust and consequently leading to inter-organizational knowledge sharing.

By utilizing the quantitative research method for model testing, this research is important in two major aspects. First, while previous research has explored central issues of knowledge sharing, most of the researches are focused on how and what to share. Seldom, the research explores why organizations engage in knowledge sharing in interorganizational context. This research identifies and empirically examines two salient aspects in trust developing and highlights the impact of trust on nurturing knowledge sharing across the supply chain. Second, this research complements previous knowledge sharing research to the extent that the quantitative data generalize the research findings and provides actionable guidelines for business partners to better coordinate and integrate the information assets.

Following the introduction, next section presents the theoretical background, the research model, and the research hypotheses. The research methods are discussed. The final section summarizes the findings as well as research implications.

II. LITERATURE REVIEW AND RESEARCH HYPOTHESES

A. Trust

Pavlou [7] defined inter-organizational trust as “the subjective belief with which organizational members collectively assess that a population of organizations will perform potential transactions according to their confident expectations, irrespective of their ability to fully monitor them.” Inter-organizational trust rests on the subjective belief and prediction that collaboration partners intend to meet obligations. Based on trust, business partners determine the extent and nature of knowledge sharing [4].

Y.H. Chen is with the Providence University, Taichung City, Taiwan R.O.C. (phone: +886-426328001 ext. 18115; fax: +886-42632-4045; e-mail: yhchen@pu.edu.tw).

J.J. Wu is with National United University, Miaoli, Taiwan R.O.C. (e-mail: jjwu@nuu.edu.tw).

S. H. Chien is with the National Taichung University of Science and Technology, Taichung, Taiwan, R.O. C. (e-mail: chien9149@nntit.edu.tw).

Y.C. Shiah is with the National Cheng Kung University, Tainan, Taiwan, R. O. C., (e-mail: ycshiah@mail.ncku.edu.tw).

Trust is a dynamic phenomenon and the transformation of trust, from conditional to unconditional, is strongly associated with the evolution and maturity of the social relationship [4]. Previous research has investigated the impact of organizational mechanisms on the formation of trust. Morgan and Hunt [6] suggest that the shared values that synchronize the behavior logic and business goals across business partners contribute to inter-organizational trust and long term business partnership. Chien et al. [8] explore consumer trust from both structural and relational aspects and highlight the importance of relational embeddedness in trust development. These situational cues not only enhance the social bond but also increase the general tendency of party trust.

B. Shared Values and Trust

Morgan and Hunt [6] defined shared values as “extent to which partners have beliefs in common about what behaviors, goals, and policies, are important or unimportant, appropriate or inappropriate, and right or wrong”. Shared values act as fundamental behavior guides converging the diverse goals and interests of the channel members to uniformity in behaviors and common goals [9]. In the context of supply chain management and knowledge sharing, the existence of shared values is a desirable controlling mechanism that motivates the members to contribute information assets and undertake in-depth collaboration to maximize joint business performance [9].

The similarity in terms of goals, policies, and strategies are important factor in enhancing the predictability of the counterparty and in strengthening the interorganizational relationship. Shared values increase the organization’s ability to predict and assess the counterparty’s motivation and intention in the business relationship. Shared values shaping the interaction patterns between supply chain members and motivating the members to contribute, share, and combine the intellectual capitals. On these grounds, we hypothesize the following relationship between shared values and trust:

H1. Organizations that embrace shared values tends to develop inter-organizational trust.

C. Relational Embeddedness and Trust

Relational embeddedness is an important predictor of social trust and relationship commitment [8]. Relational embeddedness is an informal, strong social exchange developed from previous experience. In the context of supply chain interaction, relational embeddedness exerts motivation regarding long-term collaboration and strategic partnership. Relational embeddedness promotes motivation of sharing information and resource thus increases the transparency of the transaction and business interaction [10]. Furthermore, the relational embeddedness increases the predictability of the exchange parties and assures the integrity of the counterparties. Supply chain members that develop strong social tie tend to have a greater propensity to pursue alliance relationship and develop inter-organizational trust. On these grounds, we suggest that the formation of relational embeddedness increases trust level:

H2. Organization that develops relational embeddedness tends to develop inter-organizational trust.

D. Trust and Knowledge Sharing

Trust is also an important predictor of knowledge sharing. Trust manifests the perceived ability, benevolence, integrity, and predictability of the trading party to comply with business norms [11]. Trust reflects the scope and depth of relationships among partners and vendors, and can lead to collaborative partnership and knowledge sharing.

In the business supply chain, organizations develop social attachments with the exchange parties through social interaction and business collaboration. Trust enabled the exchange parties to develop collaborative partnership and thus strengthened supplier-seller relationship. The perceived integrity and benevolence of trading parties eliminate the concerns of opportunistic behavior and facilitate the knowledge sharing across the business entities. Thus,

H3. Inter-organizational trust influences knowledge sharing positively.

We summarize the research model and hypotheses in Fig. 1.

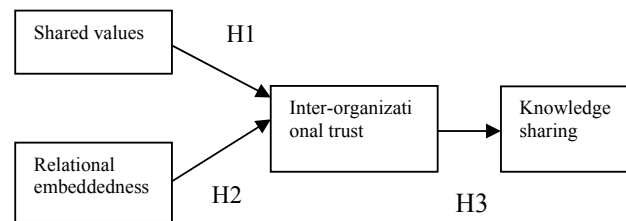


Fig. 1 The research model

III. RESEARCH METHOD

A. Questionnaire Design and Pilot Study

This study adopts the quantitative research method to verify theoretical constructs and investigate the relationships between variables. Research construct is validated through theoretical, empirical, and construct examinations [12]. Initial constructs were developed and validated via published academic studies. Two professors who have substantial publishing experiences in international publication outlets help us to examine the appropriateness and clarity of the content wording and question translation. Furthermore, twenty-five EMBA students who had experiences in supply chain management assisted with the pre-test. Cronbach’s α was applied to test the consistency of the measurement constructs. The Cronbach’s α of the pre-test was greater than 0.8 across measurement variables.

B. Research Sample

This study focuses on manufacturing firms in Taiwan. The manufacturing firm is an ideal target because its trade process requires intensive communication and interaction with distributed suppliers, wholesalers, and retailers.

The research sample firms were acquired from publicly available resources. In general, the selected firms share the common characteristics as medium- to large-sized and have experience in cross-organizational data exchange and

knowledge sharing. Managers are considered as major informants of this study because this group of people often involve in knowledge sharing strategies and use of inter-organizational information systems.

C. Measures

The questionnaire is the major research instrument and therefore warrants considerable attention. The questionnaire items are developed based on the literature. The questionnaire comprises two sections: section A includes subsections on research variables while section B requests background information on the sample firm. All the items were measured on a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The operationalizations of the constructs are provided below.

1. Shared Values

Shared values refer to the common beliefs about what behaviors, goals, and policies are important or unimportant, appropriate or inappropriate, and right or wrong [6]. The operationalization of shared values is based on Chow and Chan [13] and assesses the shared goals and visions of the business partners.

2. Relational Embeddedness

Relational embeddedness refers to the degree of the firm's alliance relationship with business partners. This study operationalizes this construct based on Bonner et al. [14] and assesses business partnership in terms of commitment, collaboration, and flexibility when facing a challenge.

3. Trust

Trust refers to the depth and assurance of feelings based on inconclusive evidence of the business interaction. The operationalization of trust is based on Lui et al. [15].

4. Knowledge Sharing

Knowledge sharing refers to the attitude as well as the willingness of the organization to continuously share information and knowledge with business partners. The operationalization of knowledge sharing is based on Moller and Svahn [16].

D. Descriptive Data Analysis

A total of 195 respondents answer the questionnaire. Descriptive data from the statistical analyses revealed that 39.48% of the responding firms have more than 500 employees. Most of the responding firms (64.62%) are large companies with annual sales more than 1000 million New Taiwan Dollars. About 38.47% of the respondents are senior managers.

E. Model Testing

Confirmative factor analysis is conducted to examine the effect of the research model. The statistical analysis shows a good model fit according to the fit standards: all the values are within a reasonable range (Hair et al., 2006) (GFI=0.869, AGFI = 0.835, CFI = 0.966, RMR = 0.069, RMSEA = 0.054, NFI = 0.912, IFI = 0.966). All factor loadings for scale items are above 0.5, and are significant at $p < 0.001$. These test results

indicate the appropriateness of the research model. Table I summarizes statistical outcomes of measurement constructs and factor analysis.

TABLE I
MEASUREMENT INDICATORS AND RESULTS OF CONFIRMATIVE FACTOR ANALYSIS (N=195)

Measurement Construct	Number of measurement indicators	Composite reliability	Average variance extracted
Shared goals	4	0.902	0.697
Relational embeddedness	4	0.888	0.666
Trust	3	0.870	0.690
Knowledge sharing	5	0.944	0.740

IV. RESULTS

Structural equation modelling (SEM) is employed to examine the relationships and variance among multiple variables. AMOS 7.0 was employed in SEM analysis. The antecedent constructs, path coefficients of shared values - trust (0.356, $p < 0.01$) and relational embeddedness – trust (0.759, $p < 0.001$) are significant providing statistical support to hypothesis 1 and 2. These results suggest that shared values and strong inter-organizational relationship play important roles in facilitating the inter-organization trust. Thus organizations should endeavour to achieve the consensus of the common goals to reduce the uncertainty and eliminate the concerns of information security to maximize the efficiency of inter-organizational knowledge sharing.

In the post-trust behaviour construct, path coefficient of trust – knowledge sharing (0.892, $p < 0.001$) is significant, providing statistical support to hypotheses 3. The result suggests that the formation of trusting belief will motivates the trading parties to pursuit knowledge sharing to better capture the business opportunities.

V. DISCUSSION

The purpose of this research was to gain a better understanding of the underlying factors driving the knowledge sharing in the context of supply chain. This research tests the impact of shared values and relational embeddedness on inter-organization trust and the consequence impact on knowledge sharing. There are several research implications of this research.

Theoretically, the research results suggest that shared values and relational embeddedness play important role on inter-organization trust. This finding highlights the strategic importance of social and culture factors in inter-organizational interaction. Furthermore, inter-organization trust is the foundation for cross-organizational data exchange and knowledge sharing. As such, organizations that seek to capture the business opportunity through inter-organizational knowledge sharing and data exchange should endeavour to develop the bonded business relationship and mutual trust.

Two practical implications are further identified based on the findings of this research. First, the results of this research suggest that for the development of trust, the business partners should place more efforts in building shared values and

developing strong business partnerships. Second, the relationship between trust and knowledge sharing highlights the impact of trust on inter-organizational knowledge sharing. Organizations should endeavor to demonstrate the reliability, predictability, and responsibility in dealing with business interactions. Besides, trust is hard to develop but easy to destroy. Thus maintaining positive image is also essential for trust development.

ACKNOWLEDGMENT

This research was supported by the National Science Council of Taiwan, R.O.C., under contract number: NSC 101-2410-H-126 -001 -MY2 and NSC 102-2221-E-006-290-MY3

REFERENCES

- [1] M. Cao and Q. Zhang, "Supply chain collaboration: Impact on collaborative advantage and firm performance," *J Oper Manag*, vol. 29, pp. 163 – 180, 2011
- [2] W. Ke and K. K. Wei, "Factors affecting trading partners' knowledge sharing: Using the lens of transaction cost economics and social-political theories," *Electron Commer RA*, 6, pp. 297 – 308, 2007
- [3] N-I. Boer, H. Berends, and P. van Baalen, "Relational models for knowledge sharing behavior," *Eur Manage J*, 29, pp. 85 – 97, 2011
- [4] N. Panteli and S. Sockalingam, "Trust and conflict within virtual inter-organizational alliances: A framework for facilitating knowledge sharing," *Decis Support Syst*, 39, pp. 599 – 617, 2005
- [5] J. Q. Barden and W. Mitchell, "Disentangling the influences of leaders' relational embeddedness on interorganizational exchange," *Acad Manage J*, vol. 50, pp. 1440 – 1461, 2007
- [6] R. M. Morgan and S. D. Hunt, "The commitment-trust theory of relationship marketing," *J Marketing*, vol. 58, pp. 20-38, 1994
- [7] P. A. Pavlou, "Institution-based trust in interorganizational exchange relationships: The role of online B2B marketplaces on trust formation," *J Strategic Inf Syst*, vol. 11, pp. 215-243, 2002
- [8] S. H. Chien, Y. H. Chen, and C. Y. Hsu, "Exploring the impact of trust and relational embeddedness in e-marketplaces: An empirical study in Taiwan," *Ind Market Manag*, vol. 41, pp. 460 – 468, 2012
- [9] V. Kashyap and E. Sicadas, "An exploratory examination of shared values in channel relationships," *J Bus Res*, vol. 65, pp. 586-593, 2012
- [10] B. Uzzi and R. Lancaster, "Relational embeddedness and learning: The case of bank loan managers and their clients," *Manage Sci*, vol. 49, pp. 383 – 399, 2003
- [11] D. H. McKnight, V. Choudhury, and C. Kacmar, "The impact of initial consumer trust on intentions to transact with a web site: A trust building model," *J Strategic Inf Syst*, vol. 11, pp. 297-323, 2002
- [12] E. G. Carmines and R. A. Zeller, *Reliability and Validity Assessment*. Beverly Hills: SAGE Publications, 1979
- [13] H. S. Chow and L. S. Chan, "Social network, social trust and shared goals in organizational knowledge sharing," *InformManage*, vol. 45, pp. 458 – 465, 2008
- [14] J. M. Bonner, D. Kim, and S. T. Cavusgil, "Self-perceived strategic network identity and its effects on market performance in alliance relationships," *J Bus Res*, vol. 58, pp. 1371-1380, 2005
- [15] S. S. Lui, H-Y. Ngo, and A. H. Y. Hon, "Coercive strategy in interfirm cooperation: Mediating roles of interpersonal and interorganizational trust," *J Bus Res*, vol. 59, pp. 466 – 474, 2006.
- [16] K. Moller and S. Svahn, "Crossing East-West boundaries: Knowledge sharing in intercultural business networks," *Ind Market Manag*, vol. 33, pp. 219 – 228, 2004.