

Supplier Perceptions of Dependencies in Supplier–Manufacturer Relationship

Mohamad Ghozali Hassan¹ Mohd Rizal Razalli² Rohani Abdullah³
Nor Azmi Johari⁴ Abdul Aziz Othman⁵

¹Othman Yeop Abdullah, Graduate School of Business, University Utara Malaysia,
06010 UUM Sintok, Kedah, Malaysia

^{2,3,5}University Utara Malaysia, School of Technology Management and Logistics,
06010 UUM Sintok, Kedah, Malaysia

⁴Pusat Teknologi Komunikasi dan Pembangunan Insan, Universiti Malaysia Perlis, 01000
Kangar, Perlis, Malaysia

Abstract

The purpose of this research is to explore the relationship between supplier's dependency and the relationship orientation of supplier-manufacturer relationship. The main tools of data collection instrument used was a questionnaire which was administrated to a total sample of 210 managers is classified by job title and respondents are also classified by their job functions are corporate executives, purchasing, manufacturing or production, material, and operation from Malaysia electrical and electronic manufacturing industry. The response rate was 26% while 96% were usable questionnaires. Sample selection was based on random sampling. The data were analyzed using mean, standard deviation and correlation between independent and dependent variables. The analyses involved statistical methods such as reliability and validity tests and multiple regressions. The findings show that the supplier perceives dependency has a significant relationship with relationship orientation statically.

Keywords: dependency; supplier-manufacturer relationship; electrical and electronic industries

1. Introduction

As companies join forces to achieve mutually beneficial goals, they admit that each is dependent on the other. This view flows directly from an exchange paradigm [e.g., 1]. Interdependence results from a relationship in which both supplier and manufacturer perceive mutual benefits from interacting [e.g., 2] and in which any loss of autonomy will be equitably compensated through the expected gains [3]. Both parties recognize that the advantages of interdependence promote efficiency and stability motivations, that provide benefits greater than either could attain singly. Efficiency and stability motivations reflect to the hope to improve economic outcomes and to adapt the company to environmental uncertainty.

Relational-oriented exchanges are a caused by the degree of interdependence. That is the mutual dependence between supplier and manufacturer. In order to reflect variable interdependence, two inherent concepts have been identified: magnitude and asymmetry [4-6]. Interdependence magnitude is defined as the sum of the dependence in an exchange and dependence asymmetry as the comparative level of dependence. It has been demonstrated that high magnitude interdependence influences the establishment

of relational structures and processes. This is because a close relationship fosters the use of non-coercive force, reduces conflict, foments stability and promotes durability [7].

2. Literature review and Hypotheses

The degree of dependence of a supplier on a manufacturer may also influence relationship behaviour. This is because high dependence implies that a valued resource is available from the manufacturer which represents potentially gainful payoffs. To ensure continued supplies in a high dependence situation, one should be expected to cooperate, even if it is non-voluntary in nature. For low dependence, the level of relationship may be conditioned by other factors but is likely to be lower since desired payoffs may be perceived to be low and not immediately forthcoming.

Drawing upon the previous empirical evidences, industrial applications and new concepts in relationship management, higher level of dependence between supplier and manufacturer is hypothesized to be positively related to relational-oriented exchange. The above arguments lead to:

Hypothesis 1: Higher level of dependence has a significant positive impact on relational oriented exchange

3. Research Methodology

3.1. Sampling and Data Collection

A total postal survey is sent out to 865 respondents in two waves during the months of September to November 2011 and from December 2011 to January 2012. A total of 218 was received and used for analysis which translates to about 25.2% response rate. The first wave yields 147 responses and the second wave yielded 71 responses.

3.2. Reliability Analysis

The Cronbach's alpha was conducted to assess the reliability of each scale. Alpha values over 0.7 indicate that all scales can be considered reliable [8]. For each of the item scales, factor analysis was used to reduce the total number of items to manageable factor. Principal components analysis is used to extract factors with eigenvalue greater than 1. Varimax rotation is used to facilitate interpretation of the factor matrix. Sampling adequacy measurement tests are also examined via the Kaiser-Meyer-Olkin statistics to validate the use of factor analysis. Factor analysis showed that the KMO value of 0.78 indicates sampling adequacy. The factor model indicates a distinct factor loading without any misclassification which is dependence.

Cronbach's alphas among 4 items in the questionnaires exceeded 0.7. Four items are identified for Dependence (DP). These items are treated as independent variables. A similar factor analysis was applied to the relational oriented-exchange with 8 items in the questionnaire without deleting any item during the factor analysis. Cronbach's alphas among 8 items in the questionnaires are exceeded 0.7. All items are identified for relational-oriented exchange (ROE) and treated as dependent variables. The KMO value of 0.89 indicates sampling adequacy.

4. Findings and Analysis

4.1. Correlation Analysis

The correlation between independent variables (relational-oriented exchange) and dependent variables (dependence) were positive. Dependence had a correlation of 0.52, $p < 0.01$ with relational-oriented exchange. Which means that the respondents are more likely to evaluate de-

pendence was positive when relational-oriented exchange is positive.

4.2. Regression Analysis

Univariate regression analysis was conducted to determine the relationship between Dependence factors with Relational-Oriented Exchange variable. Simultaneously, regression analysis identifies the most contributory variables among the Dependence factor that best predict the relational-oriented exchange factor (expectation of continuity, team-consciousness, cooperation and communication).

Table 1: Univariate Regression Result between Dependence (DP) Factor and Relational-Oriented Exchange (ROE)

R	R Square	Adjusted R Square	Std. Error of the Estimate
.581 ^a	.337	.334	.98384

F	Sig.	Durbin-Watson
104.868	.000 ^a	1.850

Model	Unstandardized Beta	Std. Error	Standardized Beta
(Constant)	1.460	.252	
Dependence	.621	.061	.581

t	Sig.	Collinearity Statistics	
		Tolerance	VIF
5.797	.000		
10.240	.000	1.000	1.000

a. Dependent Variable: Relational-Oriented Exchange

The result showed in the Table 1 demonstrate that the regression equation with predictors was significant, $R = .581$, $R^2 = .337$, $R^2 \text{ adj} = .334$, $F(1, 210) = 104.868$, $p < .001$. In other words, the univariate correlations between the predictor and the dependent variable were .581;

the predictor accounted for 33.7% of the variance in the relational-oriented exchange. The generalizability of this model in another population was .334. The value of R^2 dropped to only .003 (about 0.3%) in the adjusted R^2_{adj} , which indicates that the cross validity of this model was fine.

Table 2: Summary of Hypotheses Testing on The Direct Effect of Dependence (DP) Factor on The Relational-Oriented Exchange (ROE)

Hypotheses	Statements of Hypotheses	Remarks
H1	Higher level of dependence has a significant positive impact on relational-oriented exchange	Supported H1 hypotheses

Variables	Relational-oriented exchange	Remarks
Dependence	$\beta = 0.581$ $t = 10.240$ $p = 0.000^{***}$	H_A supported

The significant F-test revealed that the relationship between dependence variable and independent variables was linear and the model significantly predicted the dependent variable. The F-test ($1, 210$) = 104.868, $p < 0.001$ indicates on overall significant prediction in the independent variables to the dependent variables. Table 2 shows the individual contributor of predictor with a regression equation. The Dependence ($\beta = .581$, $t = 10.240$, $p = .000$) had a high standardize beta coefficient, which indicates that dependence, was an important variable in predicting relational-oriented exchange.

The independent variables impacted on the dependent variable in the direction hypothesized. Thus better relational-oriented exchange can be obtained when a company has depended on their manufacturer. The H1 is supported. The summary of hypotheses testing for the direct relationship between Dependence factor and

relational-oriented exchange is shown in Table 2.

5. Results

In this research, the following outcomes were obtained: The correlation analysis showed that dependence is related to relational-oriented exchange. The research also found that dependence is the important determinant of relational-oriented exchange. For hypothesis 1 investigate the relationship between dependence and relational-oriented exchange, this study found that significant correlation between dependence and ROE. Finding show there is a strong relationship between dependence and ROE with 0.522 [9].

6. Conclusions

Hypotheses 1 posit a significant relationship between dependence and relational-oriented exchange. In this study, relational-oriented exchange reflects the desire of a close supplier-manufacturer relationship for continuity in the long-term, anticipated prolongation to a future period and the degree of cooperation between the members. This study found that supply chain managers in Malaysia perceived that their companies are witnessing a fairly good level of relational-oriented exchange ($M = 3.75$). In relation to relational-oriented exchange of supplier-manufacturer, this study found that dependence has significant relationships with relational-oriented exchange of electrical and electronic manufacturing company.

In this study dependence refer to the extent to which a target company needs the source company to achieve its goals. As mentioned earlier, based on the mean score, the supply chain manager perceived that their companies have fairly high levels of dependence ($M = 3.90$). The results indicate that dependence is positively related to relational-oriented exchange. In

other words, the level of relational-oriented exchange may depend on the extent of adequate level of dependence. High level of dependence may lead to high level of relational-oriented exchange.

The finding is consistent with [10] who found that the relational exchange of paper mills companies was strongly and positively influenced by customer-supplier dependency and not environmental uncertainties. Dependency of paper mills was defined in terms of the customer's perception of how they're and their supplier's dependency (single firm dependency). Customers perceive dependency is related to exchange benefits, positive relationship between a single firm's perception of its dependency and its managers' interest in maintaining a relationship or developing a more relational exchange with its exchange partner. This is in line with [11] who argued that when a supplier provides a larger portion of a firm's business, that firm is more dependent on that supplier. In addition, dependency of supplier in this study is determined by the increase amount of business provided by the manufacturer, the availability of critical resources, only one company that provides that potential for partnership and the only company can accomplish a task [12]. Therefore, the findings of this study indicate statistical significance of level of dependence and relational-oriented exchange is in line with studies, which include [13, 14]. The high dependency supplier has a higher relational orientation of exchange.

7. References

- [1] Cook, K., Exchange and power in networks of interorganizational relations. *The Sociological Quarterly*, 1977. **18**: p. 62-82.
- [2] Levine, S. and P. White, Exchange as a conceptual framework for the study of interorganizational

- relations. *Administrative Science Quarterly*, 1962. **5**: p. 583-601.
- [3] Cummings, T., Transorganizational development. *Research in Organizational Behavior*, 1984. **6**: p. 367-422.
- [4] Buchanan, L., Vertical trade relationships: The role of dependence and. *Journal of Marketing Research*, 1992. **29**(1): p. 65.
- [5] Gundlach, G. and E. Cadotte, Exchange interdependence and interfirm interaction: research in a simulated channel setting. *Journal of Marketing Research*, 1994. **31**(November): p. 516-532.
- [6] Kumar, N., L. Scheer, and J.B. Steenkamp, The effects of perceived interdependence on dealer attitudes. *Journal of Marketing Research*, 1995. **32**(August): p. 348-356.
- [7] Izquierdo, C.C. and J.G. Cillan, The interaction of dependence and trust in long-term industrial relationships. *European Journal of Marketing*, 2004. **38**(8): p. 974-994.
- [8] Nunnally, J., *Psychometric Theory*. 1978, New York: McGraw Hill.
- [9] Julie, P., *SPSS Survival Manual*. 2nd ed. 2005, Shoppenhangers Road, Maidenhead, Berkshire, United Kingdom: Open University Press, McGraw-Hill Education.
- [10] Finka, R.C., W.L. James, and K.J. Hatten, Customer perceptions of dependencies in customer-supplier relationships. *Journal of Strategic Marketing*, 2011. **19**(1): p. 73-89.
- [11] Clark, W.R., P.S. Ellen, and J.S. Boles, An Examination of Trust Dimensions across High and Low Dependence Situations. *Journal of Business-to-Business Marketing*, 2010. **17**(3): p. 215-248.
- [12] Heide, J.B. and G. John, Alliances in Industrial Purchasing: The Determinants of Joint Action in Buyer-Supplier Relationships. *Journal of Marketing Research*, 1990. **XXVII**(February 1990): p. 24-36.
- [13] Andaleeb, S.S., Dependence relations and the moderating role of trust implications for behavioral intentions in marketing channel. *International Journal of Research in Marketing*, 1995. **12**: p. 157-172.
- [14] Hong, I.B. and H. Cho, The impact of consumer trust on attitudinal loyalty and purchase intentions in B2C e-marketplaces: Intermediary trust vs. seller trust. *International Journal of Information Management*, 2011. **31**(5): p. 469-479.