

# Outsourcing Performance Implication of Supplier-Manufacturer Relationships and the Perceived Impact of Environmental Dynamism in Malaysia Electrical and Electronic Industry

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**Abstract.** This study used the partial least squares (PLS) and structural equation modeling (SEM) tool to examine the implication of supplier-manufacturer relationships and the perceived impact of environmental dynamism of outsourcing performance in Malaysian electrical and electronic industry. This study also examined the perceived impact of environmental dynamism as moderating variables. The result indicated that the two dimension of the environmental dynamism which are customer demand and market competition do not moderate the relationship between relational-oriented exchange (ROE) and outsourcing success. However, customer demand is supported as an independent variable to represent the outsourcing performance implication of supplier-manufacturer relationships. The details of theoretical and practical implications of the findings are discussed.

**Keyword:** Supplier-manufacturer relationships; Environmental dynamism; Moderating variables; Electrical and Electronic industry; Outsourcing performance; Malaysia.

## 1. Introduction

In spite of the remarkable growth in outsourcing practices, few empirical studies have been conducted in this area. There are no empirical findings identifying the achievement of outsourcing performance in the most efficient and effective way. Correspondingly, there are little empirical studies that examine the empirical performance of outsourcing [1] [2]. However, although it is receiving much emphasis, the result is still vague and an unexplained puzzle [1] [3] and [4]. In fact, studies that analyse the outcome of supplier-manufacturer relationships on outsourcing performance are scarce. Thus, this would seem to be an important area for research.

First, majority of organization performance studies rely on monetary aspects such as profit and ROI to assess the organization or firm performance [5]. ROI is not directly understood by the non finance respondent only the respondent involved in finance work. ROI also relies on how an organization rationalise their CAPEX payment. Thus, in certain circumstances ROI does not replicate the straightforward perception of the respondent. This is one of the flaws of organization performance theory [6]. As the supplier-manufacturer relationships has been used broadly to assess organizational performance therefore the same should be applied and tested to the outsourcing performance which is the current gap that the research is trying to fill. [7] has initiated a non monetary model to appraise outsourcing success that is more of interest to non financial respondents. As a consequence, this study in Malaysia, dedicated to the generation of empirical evidence concerning the supplier-manufacturer relationship on whether the relationship impacts organizations' overall outsourcing success on both monetary and non monetary aspects, is merited.

The second issue concerns whether the involvement of environmental dynamism as organization strategic choices has an impact on the relationship between supplier-manufacturer relationships orientation and outsourcing success.

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H1: Relational-oriented exchange has a significant positive impact on outsourcing success

## **2. Research Context and Research Model**

### **2.1. Moderating role of Customer Demand**

Volume unpredictability is defined as the inability to forecast accurately the volume requirements or customer demand in the relationship [8]. The volatility of the downstream market and the manufacturer's share of this market both contribute to unpredictability. Adaptation to changes is carried out more readily when there are stronger expectations of relationship continuity. In [9] terms, enlarging the shadow of the future makes it easier for supplier-manufacturer to cooperate and to cope with unanticipated changes. [6] argue that when customer demand is uncertain, internalization can lead to unacceptably high administrative costs and to lower margins due to increased coordination and information processing costs. Thus, uncertainty with respect to customer demand makes outsourcing attractive because it allows companies to shift much of the risk associated with declining demand (such as idle equipment, plant closures, and head-count reductions) to supplier firms. Hence, an essential feature of cooperation in the face unanticipated change is the need to forgo taking short-term advantage of the situation to one party's unilateral benefit. Such leniency is easier to practice when the firm is more certain that two-sided expectations of continuity provide it the capacity to react against opportunism and to reciprocate forbearance. The above arguments lead to:

H2: Customer demand has a significant positive impact on outsourcing success.

H4a: Customer demand has a significant positive impact on the relationship between relational-oriented exchange and outsourcing success.

### **2.2. Moderating role of Market Competition**

[10] and [11] found that the complex choices firms make when deciding whether to internalize or outsource production are moderated by increased competitive pressures and the rapidity of technological change. The above arguments lead to:

H3: Level of competition has a significant positive impact on outsourcing success.

H4b: Level of competition has a significant positive impact on the relationship between relational-oriented exchange and outsourcing success.

### **2.3. Moderating Effects for Customer Demand**

In Figure 1, we present the moderation analysis, applying PLS product-indicator approach [12] to detect the moderating effect of customer demand on the relationship between relational-oriented exchange and outsourcing success. To test the possibility of such effect, ROE (predictor) and customer demand (first moderator) were multiplied to create interaction construct (ROE x customer demand) to predict outsourcing success [12] [13]. In this case, customer demand is a hierarchical construct, which comprises 11 items while ROE comprised of 8 items. Thus, the interaction construct represents 88 items (16×4). The AVE and CR of (ROE x customer demand) interaction variable are 0.614 and 0.990, respectively, which exceed the minimum cut-off value.

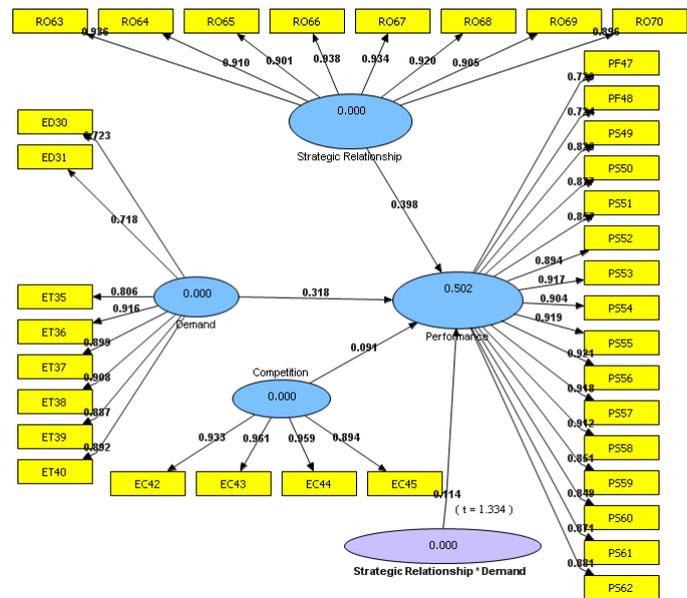


Fig. 1 Result of hypothesis testing: Moderating effect of customer demand

To test the moderating effect, we estimated the influence of predictor on criterion variable, the direct impact of the moderating variable on the criterion variable, and the influence of interaction variable on criterion variable. The significance of a moderator can be confirmed if the interaction variable influenced the criterion variable, independent of the size of the path coefficients (influence of predictor on criterion variable) and the direct impact of the moderating variable on the criterion variable [13]. In this case, we have estimated a standardized path coefficient of 0.065 for the interaction construct (ROE x customer demand), which is not significant at  $p < 0.05$  ( $t = 1.96$ ). In estimating the significance of the interaction effect, we used a two tailed test because there is a paucity of theoretical support whether customer demand enhances or diminishes the association between ROE and outsourcing success (see Table 1).

The effect size is calculated as follows:

$$f^2 = \frac{R_i^2 - R_m^2}{1 - R_i^2} = \frac{0.502 - 0.489}{1 - 0.502} = 0.026$$

The results show that the size of the moderating effect is small ( $f^2 = 0.03$ ; Cohen 1988) as well as the resulting beta changes are insignificant ( $\beta = -0.244$ ,  $t = 0.383$ ). Consequently, we confirm that customer demand does not moderate the relationship between ROE and outsourcing success, and we reject H4a (see Figure 1).

#### 2.4. Moderating Effects for Market Competition

In Figure 1, we present the moderation analysis, applying PLS product-indicator approach [13] to detect the moderating effect of market competition on the relationship between relational-oriented exchanges and outsourcing success. To test the possibility of such effect, ROE (predictor) and market competition (second moderator) was multiplied to create interaction construct (ROE x market competition) to predict outsourcing success [12] [13]. In this case, market competition is a hierarchical construct, which comprises 4 items while ROE comprised 8 items and thus the interaction construct represents 32 (4x8) items. The AVE and CR of (ROE x market competition) interaction variable are 0.731 and 0.989, respectively, which exceed the cut-off value.

To test the moderating effect, we have estimated the influence of predictor on criterion variable, the direct impact of the moderating variable on the criterion variable, and the influence of interaction variable on criterion variable. The significance of a moderator can be confirmed if the interaction variable influenced the criterion variable, independent of the size of the path coefficients (influence of predictor on criterion variable) and the direct impact of the moderating variable on the criterion variable [13]. In this case, we have estimated a standardized path coefficient of -0.084 for the second interaction construct (ROE X market demand), which is not significant at  $p < 0.05$  ( $t = 1.96$ ). In estimating the significance of the interaction effect,

we used a two tailed test because there is a paucity of theoretical support whether market competition enhances or diminishes the association between ROE and outsourcing success (see Table 1).

The effect size is calculated as follows:

$$f^2 = \frac{Ri^2 - Rm^2}{1 - Ri^2} = \frac{0.503 - 0.489}{1 - 0.503} = 0.028$$

The results show that the size of the moderating effect is small ( $f^2 = 0.03$ ; Cohen, 1988) as well as the resulting beta changes are insignificant ( $\beta = -0.091$ ,  $t = 0.114$ ). Consequently, we confirm that market competition does not moderate the relationship between ROE and outsourcing success, and we reject H4b (see Figure 1).

Table 1 All path coefficients and hypothesis testing

Hypothesis		Beta	Std Error	t value	Decision
H1	ROE -> Outsourcing success	0.531	0.234	2.272	Supported
H2	Demand -> Outsourcing success	0.456	0.238	1.914	Supported
H3	Competition -> Outsourcing success	0.101	0.085	1.196	Not supported
H4a	ROE * Demand -> Outsourcing success	-0.244	0.383	0.637	Not supported
H4b	ROE * Competition -> Outsourcing success	-0.091	0.114	0.794	Not supported

\*p<0.05

### 3. Discussion and Conclusion

The first objective of the study is to examine the relationship between ROE and outsourcing success. Overall, the results of the correlation analysis revealed that dimension between ROE and outsourcing success was significant. The results of the correlation analysis suggest that high level of ROE attributes are related to high level of outsourcing success. This study hypothesized that ROE has a significant positive relationship with outsourcing success (hypothesis 1). The variance in the outsourcing success is explained by relational-oriented exchange. Specifically, this study found that outsourcing performance in terms of implementation factors the company undertakes in order to achieve its objectives, goals and expectations may be enhanced through relationship orientation.

Customer demand (H2) was significantly related to outsourcing performance. Hypothesis 3 was not supported as market competition (H3) was not significantly related to outsourcing success. The result of H4a and H4b suggest other variables, along with environmental dynamism or other environmental construct measures, are needed to explain the moderation effect on relationship orientation and outsourcing performance. This result focused on just customer demand and market competition and not all sources of environmental uncertainty. There are multiple sources of environmental uncertainty beyond environmental dynamism.

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