



# Strategic alliances with suppliers and customers in a manufacturing supply chain

## From a manufacturer's perspective

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### Abstract

**Purpose** – The main purposes of the study are to: test the strategic alliance framework developed by Sambasivan *et al.* on the strategic alliances with suppliers and customers, separately; and compare the factors influencing strategic alliances with suppliers and customers based on the results. The present study analyzes the effect of strategic alliance motives, environment, asset specificity, perception of opportunistic behavior, interdependence between supply chain partners, and relational capital on strategic alliance outcomes.

**Design/methodology/approach** – A sample of 228 companies representing different industries in manufacturing in Malaysia participated in the study. The sampling frame used was Federation of Malaysian Manufacturers directory. A questionnaire was distributed to all the companies. The authors tested the structural model for 185 suppliers and 75 customers using structural equation modelling.

**Findings** – Based on the results, the key differences in the strategic alliances with suppliers and customers are: the relationship between environment and alliance motives is stronger for alliances with suppliers, the relationship between alliance motives and relational capital is significant for alliances with customers, the relationship between asset specificity and interdependence is significant for alliances with customers, the relationship between perception of opportunistic behaviour and relational capital is significant for alliances with customers, and the relationship between perception of opportunistic behaviour and interdependence is significant for alliances with suppliers.

**Originality/value** – The current study adds to the body of knowledge on strategic alliances. The results can help supply chain managers identify factors that influence the success of strategic alliances with suppliers and customers and develop strategies to enhance effective collaborative relationships between supply chain partners. The authors specify the limitations and directions for future research.

**Keywords** Strategic alliance, Suppliers and customers, Manufacturing supply chain, Malaysia, Supply chain management

**Paper type** Research paper



## 1. Introduction

Firms engage in strategic alliances with suppliers and customers to achieve various strategic objectives (Judge and Dooley, 2006). According to Todeva and Knoke (2005), the active engagement can result in a number of positive outcomes that can range from acquisition of resources to creation of synergies. Effective collaborative arrangements such as strategic alliances are powerful tools for firms to remain competitive in today's business environment by enhancing market power, increasing efficiencies, accessing new or critical resources and entering new markets (Kale and Singh, 2009). According to Emberson and Storey (2006), even under excellent conditions collaborative relationships are prone to failure due to organizational and behavioral issues. The benefits resulting from collaborative arrangements far outweigh the problems associated with these arrangements. The creation, maintenance, and success of strategic alliances are challenging tasks to alliance managers (Parkhe, 1993). According to Gulati (1998, p. 293), strategic alliances are:

[...] voluntary agreements between firms involving exchange, sharing, or co-development of products, technologies or services. They can occur as a wide range of motives and goals take a variety of forms and occur across vertical and horizontal boundaries.

There have been many theoretical advances to analyze strategic alliances from different perspectives (Das and Teng, 2003; Dyer and Singh, 1998; Parkhe, 1993; Rungtusanatham *et al.*, 2003; Sambasivan *et al.*, 2013). Despite proliferation of research papers in the area of supply chain, there are many "unsolved" issues in the study of strategic alliances (Todeva and Knoke, 2005). According to Greve *et al.* (2010), more than 50 percent of the strategic alliances fail. The researchers have been intrigued by the incidence of high failure rates and many have attempted to uncover the factors that influence the success of strategic alliances (Das and Teng, 2003; Dyer and Singh, 1998; Parkhe, 1993; Rungtusanatham *et al.*, 2003). Sambasivan *et al.* (2013) have developed an integrated model by considering the life cycle of a typical strategic alliance. However, they have not compared the strategic alliances with suppliers and customers. The alliances between suppliers and customers can be different since the motives are different. For example, a motive for strategic alliances with suppliers can be to ensure high quality of incoming materials and a motive for strategic alliances with customers can be to share information about the demand.

The contributions of this study are twofold. First, we have used the framework developed by Sambasivan *et al.* (2013) and Siew-Phaik *et al.* (2010) to empirically test the alliance framework for suppliers and customers separately and have identified the differences. Second, the study has been conducted in the manufacturing sector in Malaysia. Most of the studies reported in the literature are from developed countries and there are only a few studies from developing countries like Malaysia. In this research, the strategic alliances with suppliers and customers have been studied from the manufacturers' perspective.

## 2. Theoretical framework and hypotheses development

Integration of various theories is essential to completely understand and explain strategic alliances. We have used the framework developed by Sambasivan *et al.* (2013) and Siew-Phaik *et al.* (2010). There are a few reasons for using this framework. First, according to Park and Ungson (2001), inter-firm alliances (relationships) must be

studied from different perspectives by combining the concepts from different areas such as economics, organization sciences and strategy. Such a combination can help understand the relevant issues better. A few researchers have studied the inter-firm relationships from a narrow perspective based on one or two theories (Parkhe, 1993; Song and Panayides, 2002; Yasuda, 2005; Young-Ybarra and Wiersema, 1999). The framework used in our study is more comprehensive. Second, the framework used in this study is unique. Siew-Phaik *et al.* (2010) have attempted to develop a model based on three case studies in Malaysia. Sambasivan *et al.* (2013) have developed the framework based on a solid foundation. They have developed an integrated strategic alliance model rooted on the life cycle perspective of Kale and Singh (2009). The life cycle approach to analyze the strategic alliances is new. According to Wagner (2011), expounding the alliances based on the life cycle concept is better since an alliance experiences different stages of a life cycle. In the process of developing the framework, Sambasivan *et al.* (2013) have combined the relevant characteristics of five theories (transaction cost economics, resource-based theory, contingency theory, social exchange theory and personal relationship theory) to construct a theoretical framework that is given in Figure 1. Our study is different from the study by Sambasivan *et al.* (2013). We have separated the strategic alliances with suppliers and customers and have analyzed them independently. In the earlier study, these alliances have been combined.

2.1 Hypotheses development

2.1.1 *Strategic alliance motives and interdependence.* The degree of dependence of a firm on another is related to the amount of resources needed and the availability of alternatives (Pfeffer and Salancik, 1978). Based on RBT, the strategic alliance motives accentuate the degree of interdependence and the intention to seek complementary resources creates the interdependence between alliance partners. Goal and task interdependencies outline the shared objectives and efforts that are required from each partner to keep the alliance active. Reward interdependence indicates how an achievement of one alliance partner can affect others (Monczka *et al.*, 1998; Van Vijfeijken *et al.*, 2002). The strategic alliance motives play a significant role in the level of interdependency between the alliance partners. Based on these arguments, we posit the following hypothesis:

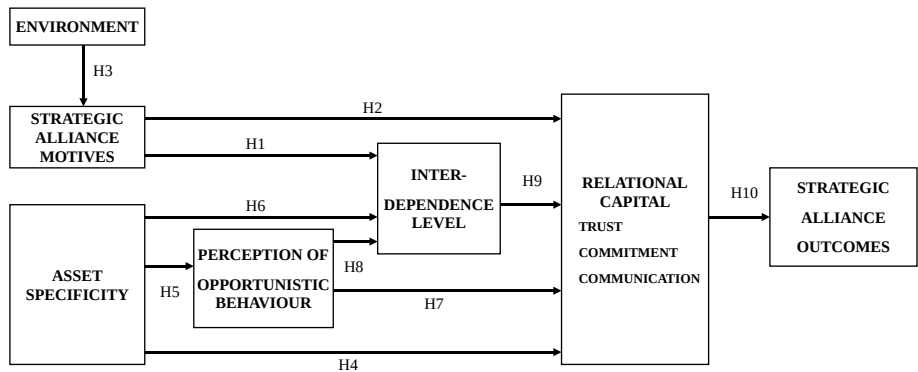


Figure 1.  
Research framework

Source: Sambasivan *et al.* (2013)

- H1. From the manufacturer's perspective, strategic alliance motives of the alliance partners (supplier, manufacturer and customer) have a positive relationship with the level of interdependency between them.

*2.1.2 Strategic alliance motives and relational capital (trust, commitment, and communication).* According to Das and Teng (2003) and Sambasivan *et al.* (2013), strategic alliance motives play a significant role in how well the partners communicate with each other, how trustworthy and committed these partners are towards the collaborative relationship. The strategic alliances that are supported by strong motives exhibit high levels of information sharing and participation (Narasimhan and Nair, 2005). Based on these arguments, we posit the following hypothesis:

- H2. From the manufacturer's perspective, strategic alliance motives of the alliance partners (supplier, manufacturer and customer) have a positive relationship with the level of relational capital between them.

*2.1.3 Environment and strategic alliance motives.* The environment poses both constraints and opportunities for the firms. Therefore, the ability to adapt to the environmental changes is essential in order to determine the competitiveness of a firm. When facing the emergence of new global competition, fast changing technology and increasingly uncertain business environment, firms may prefer to form relationships such as strategic alliances (Young-Ybarra and Wiersema, 1999). When the environment is complex, munificent, and dynamic, the firms have a tendency to form strategic alliances (Chen and Lin, 2004). Based on these arguments, we posit the following hypothesis:

- H3. From the manufacturer's perspective, environment has a positive influence on strategic alliance motives of the alliance partners (supplier, manufacturer and customer); the more complex, munificent, and dynamic the environment, the stronger will be the alliance motives.

*2.1.4 Asset specificity and interdependence between alliance partners.* Previous studies acknowledge that asset specificity is closely related to building a strong and effective inter-organizational relationship (Kwon and Suh, 2005; Young-Ybarra and Wiersema, 1999). The investment in asset specific resources enables and restricts specific goals that are achieved by the partners and the tasks that are performed by the partners (Das and Teng, 2003). The tasks performed and the goals achieved have a direct impact on work outcomes (reward) (Wageman and Baker, 1997). Therefore, the alliance partners that are involved in strategic relationship characterized by a high degree of asset specificity are likely to be highly interdependent in terms of task, goals, and reward. Based on the above arguments, we posit the following hypothesis:

- H4. From the manufacturer's perspective, asset specificity has a positive relationship with level of interdependence between alliance partners (supplier, manufacturer and customer).

*2.1.5 Asset specificity and perception of opportunistic behavior.* Williamson (1985, p. 47) describes the concept of opportunism as "self-interest seeking with guile". Kwon and Suh (2005) add that there is a chance that the individual or firm will act opportunistically. The TCE suggests that when there are asset specific investments by partners in a strategic alliance, the perception of opportunistic behavior toward the partners should

be reduced (Judge and Dooley, 2006). In contrast, the partner's aversion toward making asset specific investments indicates that the perceived vulnerability of the firm is higher, and in turn the firm sees the other party as more likely to behave opportunistically (Parkhe, 1993). Based on the above arguments, we posit the following hypothesis:

- H5. From the manufacturer's perspective, the asset specificity has a negative relationship with the perception of opportunistic behavior toward their alliance partners (supplier, manufacturer and customer).

*2.1.6 Asset specificity and relational capital.* According to Kwon and Suh (2005), strategic alliance partner's asset specificity has a positive effect on trust since the firm might consider such investment by their partnering firm as a favorable devotion to the relationship and thus increase trust and commitment with the partner. Previous studies show that strategic alliances supported by a high level of asset specificity are most likely to be stable, and have high levels of performance since such non-recoverable investments promote trust and commitment among partner firms (Kwon and Suh, 2005; Parkhe, 1993). This is true since these distinctive investments are likely to lose their value upon transfer (Parkhe, 1993). Based on the above, we posit:

- H6. From the manufacturer's perspective, the asset specificity has a positive relationship with the relational capital among alliance partners (supplier, manufacturer and customer).

*2.1.7 Perception of opportunistic behavior and interdependence between alliance partners.* According to Grover and Malhotra (2003), if a partner-firm in a supply chain perceives opportunistic behavior or exploitation by other partners, then it may not be willing to forge a close relationship. This will have a significant impact on the mutual interdependence between the partners. Without high interdependence, it is very difficult for the alliance partners to achieve a win-win result (Wageman and Baker, 1997). Therefore, we posit the following hypothesis:

- H7. From the manufacturer's perspective, the perception of opportunistic behavior between alliance partners (supplier, manufacturer and customer) has a negative relationship with the level of interdependence between them.

*2.1.8 Perception of opportunistic behavior and relational capital (trust, commitment and communication).* Judge and Dooley (2006) point out that the perception of opportunistic behavior determines the outcome of a strategic alliance. When trust is present within a strategic alliance, it increases the levels of communication, information flow and commitment between alliance partners (Das and Teng, 2003) and increases the level of strategic/operational flexibility in dealing with uncertainty (Young-Ybarra and Wiersema, 1999). Since trust is closely related to the potential opportunism as demonstrated by previous studies, the firm is likely to distrust the partners if they are perceived to behave in an opportunistic manner (Kwon and Suh, 2005). Based on the above arguments, we posit:

- H8. From the manufacturer's perspective, the perception of opportunistic behavior has a negative relationship with the relational capital among alliance partners (supplier, manufacturer and customer).

*2.1.9 Interdependence and relational capital.* Bamford *et al.* (2003) suggest that the strength of relationship between alliance partners is critical to the success of every

strategic alliance. How well the partners work together not only affects their ability to execute strategy, adapt to change and innovate over time, but also enhances the performance of the strategic alliance members as a whole. Interdependence leads to increased commitment and trust (Das and Teng, 2003). For joint actions to succeed, there should be a high level of trust, commitment and communication between alliance partners (Sambasivan *et al.*, 2011). Based on the above arguments, we posit the following hypothesis:

*H9.* From the manufacturer's perspective, interdependence between alliance partners (supplier, manufacturer and customer) has a positive relationship with relational capital.

*2.1.10 Relational capital and strategic alliance outcomes.* According to Das and Teng (2003), relational attributes are one of the explanations for strategic alliance performance. Inter-firm trust and commitment have been found to be the critical factors in partner satisfaction and they have a direct link with performance (Zaheer *et al.*, 1998). Certainly, without communication quality and participation, it is very difficult to achieve successful partnerships since communication becomes critical in signaling future intentions of the partner firms (Mohr and Spekman, 1994). According to Sambasivan *et al.* (2011), relationship capital mediates the relationship between interdependence and strategic alliance outcomes. In this research, strategic alliance outcomes consist of three dimensions: goal achievement, value creation, and re-evaluation (Ariño, 2003; Segil, 2004). Based on the above arguments, we posit the following hypothesis:

*H10.* From the manufacturer's perspective, relational capital between alliance partners (supplier, manufacturer and customer) has a positive relationship with their strategic alliance outcomes.

### 3. Methods

#### 3.1 Sample and non-response bias

This research was carried out in the manufacturing sector in Malaysia. The unit of analysis was a company and the sampling frame used was a directory published by Federation of Malaysian Manufacturers (FMM). The survey questionnaires were sent to the managers heading the supply chain or related units. The various industrial sectors represented in the sample were:

- electrical and electronics (18.9 percent);
- chemicals (18 percent);
- automobiles (14.8 percent);
- general manufacturing (13.5 percent);
- rubber and plastics (7.8 percent);
- food products (6.2 percent);
- wood and related products (4.5 percent);
- radio/television (3.7 percent);
- basic metals (3.3 percent); and
- others (9 percent) (Sambasivan *et al.*, 2013).

The survey questionnaire was sent to 2,156 firms listed in the FMM directory.

We received 228 questionnaires (a response rate of 10.6 percent) in which seven were unusable due to missing data. A total of 146 respondents had strategic alliances with their suppliers, 36 respondents had strategic alliances with their customers and 39 respondents had strategic alliances with both suppliers and customers. In this research, we treat the alliances with suppliers ( $146 + 39 = 185$ ) and customers ( $39 + 36 = 75$ ) separately. A question that is addressed in this research is: are there differences in the factors influencing formation and maintenance of strategic alliances between suppliers and customers?

Since the response rate was less than 30 percent, we tested for non-response bias between the first wave and the last (third) wave of responses (Armstrong and Overton, 1977). We examined non-response bias by comparing the means of main constructs, number of employees, ownership of firm, types of firm, sales turnover and paid-up capital of the firm. The independent *t*-test showed no significant differences between responding firms in waves one and three, implying there was no presence of non-response bias (Sambasivan *et al.*, 2013).

3.2 Measures

Survey items were developed based on previous studies. Seven variables were tested: strategic alliance motives, asset specificity and perception of opportunistic behavior, interdependence, relational capital, environment and strategic alliance outcomes. The number of items and sources referred for the research instruments are summarized in Table I and the items are given in the Appendix. The instrument was pre-tested through:

| Variables                             | Dimensions (no. of items)                                                                                                                    | Sources referred                                                 |
|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|
| Strategic alliance motives            | Property-based resource acquisition (4)<br>Knowledge-based resource acquisition (4)                                                          | Barney (1996), Chen and Lin (2004)                               |
| Perception of opportunistic behaviour | 1 (5)                                                                                                                                        | Kwon and Suh (2005)                                              |
| Asset specificity                     | Tangible assets (1)<br>Intangible assets (2)                                                                                                 | Young-Ybarra and Wiersema (1999)                                 |
| Relational capital                    | Communication<br>1. Information quality (5)<br>2. Information participation (4)<br>3. Information sharing (7)<br>Trust (4)<br>Commitment (3) | Young-Ybarra and Wiersema (1999)                                 |
| Interdependence                       | Task interdependence (3)<br>Goal interdependence (4)<br>Reward interdependence (3)                                                           | Wageman and Baker (1997),<br>Van Vijfeijken <i>et al.</i> (2002) |
| Strategic alliance outcomes           | Goal achievement (3)<br>Value creation (6)<br>Re-evaluation (4)                                                                              | Ariño (2003), Bamford <i>et al.</i> (2003),<br>Segil (2004)      |
| Environment                           | Complexity (3)<br>Dynamism (3)<br>Munificence (3)                                                                                            | Chen and Lin (2004)                                              |

**Table I.**  
Number of items and  
sources referred for the  
research instruments

- eight interviews with industry practitioners; and
- distributing the questionnaire and receiving feedback from 40 manufacturing companies.

### 3.3 Structural equation modeling (SEM) approach

SEM approach was used for:

- testing the structural relationships between various constructs; and
- conducting confirmatory factor analysis (CFA) to test the validity of the constructs.

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The fit indices used in this study for assessing the structural model include: GFI, CFI, root mean square error approximation (RMSEA), RMR and the  $\chi^2/\text{degrees of freedom}$  ratio. Fit index values (e.g. CFI) greater than 0.90, RMSEA and RMR lower than 0.08 and a  $\chi^2/\text{degrees of freedom}$  ratio less than 3.00 have been recommended to indicate good model fit (Hair *et al.*, 2006).

In this research, a structural model with two sets of data, one set for suppliers and one set for customers, has been used to identify the factors that influence the formation and maintenance of strategic alliances with suppliers and customers. As indicated earlier, the model for suppliers used data from 185 respondents and the model for customers used data from 75 respondents.

## 4. Results

### 4.1 Reliability and validity tests

Reliability tests were carried out separately for the data from suppliers and customers. Cronbach's  $\alpha$  was used to test the inter-item consistency (reliability) of the research instrument. The Cronbach's  $\alpha$  values for all our scaled measures were above 0.7 – an acceptable level (Hair *et al.*, 2006). The Cronbach's  $\alpha$  values for various constructs and their dimensions are given in Table II. The measurement adequacy (construct validity) of various constructs was verified by CFA using LISREL 8.72. The results of the validity tests are given in Table II. The values of various indicators are within the threshold values prescribed by Hair *et al.* (2006).

### 4.2 Descriptive statistics

The mean values of different constructs for suppliers and customers are given in Table III. We performed independent *t*-tests to verify if the mean values of constructs between suppliers and customers were different and based on the tests no significant differences were observed. Correlations were run between the constructs for suppliers and customers and results are given in Tables IV and V. It can be observed that the majority of the correlations are significant.

### 4.3 Hypotheses testing – suppliers

We tested the structural relationships, for suppliers and customers, between various constructs using SEM. The model statistics for suppliers are: CFI = 0.99, GFI = 0.88, NFI = 0.97, RMSEA = 0.072, RMR = 0.072,  $\chi^2/\text{degrees of freedom}$  = 1.96. A structural model for strategic alliances with suppliers is shown in Figure 2. Based on the statistics, the model fit for suppliers is deemed acceptable and various hypotheses were tested. *H1* is supported ( $r = 0.64$ ,  $p < 0.05$ ), implying that interdependence with suppliers

|                                                  | Strategic alliances with<br>suppliers ( $n = 185$ )                                         | Strategic alliances with<br>customers ( $n = 75$ )                                          |
|--------------------------------------------------|---------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| Strategic alliance motives                       | 0.730 <sup>a</sup>                                                                          | 0.764 <sup>a</sup>                                                                          |
| Acquiring property-based<br>resources            | 0.901 <sup>a</sup>                                                                          | 0.890 <sup>a</sup>                                                                          |
| Acquiring knowledge, skills,<br>and technologies | GFI = 0.96, RMSEA = 0.069,<br>RMR = 0.030, $\chi^2 = 21$ , df = 9,<br>$p$ -value = 0.0127   | GFI = 0.99, RMSEA = 0.004,<br>RMR = 0.029, $\chi^2 = 5.6$ , df = 5,<br>$p$ -value = 0.3472  |
| Perception of opportunistic<br>behavior          | 0.724 <sup>a</sup>                                                                          | 0.734 <sup>a</sup>                                                                          |
|                                                  | GFI = 1.00, RMSEA = 0.00,<br>RMR = 0.012, $\chi^2 = 0.63$ , df = 2,<br>$p$ -value = 0.7305  | GFI = 0.98, RMSEA = 0.062,<br>RMR = 0.042, $\chi^2 = 2.57$ , df = 2,<br>$p$ -value = 0.2768 |
| Asset specificity                                | 0.897 <sup>a</sup>                                                                          | 0.858 <sup>a</sup>                                                                          |
| Relational capital                               | 0.894 <sup>a</sup>                                                                          | 0.860 <sup>a</sup>                                                                          |
| Communication                                    | 0.836 <sup>a</sup>                                                                          | 0.867 <sup>a</sup>                                                                          |
| Trust                                            | 0.895 <sup>a</sup>                                                                          | 0.898 <sup>a</sup>                                                                          |
| Commitment                                       | GFI = 0.96, RMSEA = 0.069,<br>RMR = 0.032, $\chi^2 = 23$ , df = 9,<br>$p$ -value = 0.047    | GFI = 0.96, RMSEA = 0.074,<br>RMR = 0.028, $\chi^2 = 7.05$ , df = 5,<br>$p$ -value = 0.2167 |
| Interdependence                                  |                                                                                             |                                                                                             |
| Task                                             | 0.888 <sup>a</sup>                                                                          | 0.887 <sup>a</sup>                                                                          |
| Goal                                             | 0.863 <sup>a</sup>                                                                          | 0.882 <sup>a</sup>                                                                          |
| Reward                                           | 0.722 <sup>a</sup>                                                                          | 0.770 <sup>a</sup>                                                                          |
|                                                  | GFI = 0.99, RMSEA = 0.064,<br>RMR = 0.009, $\chi^2 = 1.94$ , df = 2,<br>$p$ -value = 0.3799 | GFI = 1.00, RMSEA = 0.00,<br>RMR = 0.012, $\chi^2 = 0.76$ , df = 2,<br>$p$ -value = 0.7855  |
| Environment                                      |                                                                                             |                                                                                             |
| Dynamism                                         | 0.871 <sup>a</sup>                                                                          | 0.883 <sup>a</sup>                                                                          |
| Complexity                                       | 0.917 <sup>a</sup>                                                                          | 0.913 <sup>a</sup>                                                                          |
| Munificence                                      | 0.811 <sup>a</sup>                                                                          | 0.808 <sup>a</sup>                                                                          |
|                                                  | Saturated fit                                                                               | Saturated fit                                                                               |
| Strategic alliance outcomes                      | 0.887 <sup>a</sup>                                                                          | 0.901 <sup>a</sup>                                                                          |
| Goal achievement                                 | 0.793 <sup>a</sup>                                                                          | 0.876 <sup>a</sup>                                                                          |
| Value creation                                   | 0.901 <sup>a</sup>                                                                          | 0.880 <sup>a</sup>                                                                          |
| Re-evaluation                                    | GFI = 0.095, RMSEA = 0.048,<br>RMR = 0.05, $\chi^2 = 22$ , df = 15,<br>$p$ -value = 0.038   | GFI = 0.92, RMSEA = 0.070,<br>RMR = 0.053, $\chi^2 = 22$ , df = 14,<br>$p$ -value = 0.0737  |

Note: <sup>a</sup>Cronbach's  $\alpha$

**Table II.**  
Reliability and validity  
test results for suppliers  
and customers

increases with stronger alliance motives. *H2* is not supported ( $r = 0.12$ ,  $p > 0.05$ ), indicating that alliance motives do not have a significant relationship with relational capital. *H3* is supported ( $r = 0.95$ ,  $p < 0.05$ ), implying that environment strongly influences the alliance motives towards suppliers. *H4* is not supported ( $r = 0.12$ ,  $p > 0.05$ ), indicating that asset specificity (asset specific investments) does not have significant relationship with relational capital. *H5* is supported ( $r = -0.68$ ,  $p < 0.05$ ), indicating that asset specificity significantly reduces the perception of opportunistic behavior towards suppliers. *H6* is not supported ( $r = 0.14$ ,  $p > 0.05$ ), implying that asset specificity does not have a significant relationship with interdependence between manufacturers and suppliers. *H7* is not supported ( $r = -0.08$ ,  $p > 0.05$ ), indicating that perception of opportunistic behavior does not have significant relationship with relational capital. *H8* is supported ( $r = -0.22$ ,  $p < 0.05$ ), implying that perception of

| Variables                          | Suppliers ( $n = 185$ ) |       | Customers ( $n = 75$ ) |       |
|------------------------------------|-------------------------|-------|------------------------|-------|
|                                    | Mean                    | SD    | Mean                   | SD    |
| <i>Strategic alliance motives</i>  |                         |       |                        |       |
| Mov1                               | 11.04                   | 3.56  | 11.76                  | 3.60  |
| Mov2                               | 14.80                   | 5.26  | 14.80                  | 5.21  |
| <i>Asset specificity</i>           |                         |       |                        |       |
| Intangible assets                  | 1.79                    | 2.65  | 1.67                   | 2.58  |
| Tangible assets                    | 4.49                    | 5.00  | 4.16                   | 5.08  |
| <i>Degree of integration</i>       |                         |       |                        |       |
| Communication                      | 48.42                   | 10.00 | 57.65                  | 10.58 |
| Trust                              | 10.42                   | 2.58  | 10.24                  | 2.70  |
| Commitment                         | 10.29                   | 2.54  | 10.06                  | 2.69  |
| <i>Interdependence</i>             |                         |       |                        |       |
| Goal interdependence               | 12.72                   | 3.68  | 12.66                  | 3.66  |
| Task interdependence               | 10.10                   | 2.44  | 9.65                   | 2.57  |
| Reward interdependence             | 10.53                   | 2.45  | 9.96                   | 2.52  |
| <i>Strategic alliance outcomes</i> |                         |       |                        |       |
| Goal achievement                   | 10.53                   | 2.47  | 10.43                  | 2.50  |
| Value creation                     | 22.24                   | 5.70  | 21.21                  | 6.58  |
| Satisfaction from re-evaluation    | 13.72                   | 3.29  | 13.50                  | 3.10  |
| <i>Environment</i>                 |                         |       |                        |       |
| Complexity                         | 12.35                   | 2.59  | 11.49                  | 2.90  |
| Dynamism                           | 11.69                   | 2.43  | 11.20                  | 2.73  |
| Munificence                        | 10.29                   | 2.27  | 10.23                  | 2.44  |

**Table III.**  
Descriptive statistics  
of various constructs

opportunistic behavior has a significant impact on the interdependence between manufacturers and suppliers. *H9* is supported ( $r = 0.69$ ,  $p < 0.05$ ), indicating that interdependence between manufacturers and suppliers increases the relational capital between them. *H10* is supported ( $r = 0.98$ ,  $p < 0.05$ ), implying that relational capital increases the alliance outcomes for the manufacturers and the suppliers.

#### 4.4 Hypotheses testing – customers

The model statistics for customers are: CFI = 0.98, GFI = 0.88, NFI = 0.94, RMSEA = 0.014, RMR = 0.059,  $\chi^2/\text{degrees of freedom} = 1.01$ . A structural model for strategic alliances with customers is shown in Figure 3. Based on the statistics, the model fit for customers is deemed acceptable and various hypotheses were tested. *H1* is supported ( $r = 0.81$ ,  $p < 0.05$ ), implying that interdependence with customers increases with stronger alliance motives. *H2* is supported ( $r = 0.64$ ,  $p < 0.05$ ), indicating that alliance motives has a significant relationship with relational capital. *H3* is supported ( $r = 0.30$ ,  $p < 0.05$ ), implying that environment influences the alliance motives towards customers. *H4* is not supported ( $r = 0.31$ ,  $p > 0.05$ ), indicating that asset specificity (asset specific investments) does not have a significant relationship with relational capital. *H5* is supported ( $r = -0.81$ ,  $p < 0.05$ ), indicating that asset specificity significantly reduces the perception of opportunistic behavior towards customers. *H6* is supported ( $r = 0.35$ ,  $p < 0.05$ ), implying that asset specificity has a significant relationship with interdependence between manufacturers and customers. *H7* is supported ( $r = -0.23$ ,  $p < 0.05$ ), indicating that perception of opportunistic behavior has a significant relationship with relational capital. *H8* is not supported

Table IV.  
Bivariate correlations  
for dimensions of the  
studied variables

|                                             | 1       | 2       | 3       | 4       | 5       | 6       | 7       | 8       | 9       | 10      | 11      | 12      | 13      | 14      | 15      | 16      | 17 |
|---------------------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----|
| <i>SA motives</i>                           |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |    |
| 1. Mov1                                     | 1       |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |    |
| 2. Mov2                                     | 0.671** | 1       |         |         |         |         |         |         |         |         |         |         |         |         |         |         |    |
| <i>Asset specificity</i>                    |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |    |
| 3. Intangible asset                         | 0.439** | 0.544** | 1       |         |         |         |         |         |         |         |         |         |         |         |         |         |    |
| 4. Tangible asset                           | 0.625** | 0.698** | 0.680** | 1       |         |         |         |         |         |         |         |         |         |         |         |         |    |
| <i>Perception of opportunistic behavior</i> |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |    |
| 5. Relational capital                       | 0.554** | 0.642** | 0.538** | 0.663** | 1       |         |         |         |         |         |         |         |         |         |         |         |    |
| 6. Communication                            | 0.672** | 0.786** | 0.627** | 0.767** | 0.757** | 1       |         |         |         |         |         |         |         |         |         |         |    |
| 7. Trust                                    | 0.555** | 0.715** | 0.561** | 0.700** | 0.703** | 0.860** | 1       |         |         |         |         |         |         |         |         |         |    |
| 8. Commitment                               | 0.631** | 0.768** | 0.610** | 0.743** | 0.694** | 0.863** | 0.815** | 1       |         |         |         |         |         |         |         |         |    |
| <i>Interdependence</i>                      |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |    |
| 9. Task interdependence                     | 0.613** | 0.688** | 0.555** | 0.667** | 0.606** | 0.817** | 0.734** | 0.815** | 1       |         |         |         |         |         |         |         |    |
| 10. Goal interdependence                    | 0.639** | 0.738** | 0.461** | 0.671** | 0.643** | 0.834** | 0.815** | 0.801** | 0.780   | 1       |         |         |         |         |         |         |    |
| 11. Reward interdependence                  | 0.570** | 0.718** | 0.503** | 0.673** | 0.616** | 0.818** | 0.753** | 0.772** | 0.723** | 0.819** | 1       |         |         |         |         |         |    |
| <i>SA outcomes</i>                          |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |    |
| 12. Goal achievement                        | 0.648** | 0.770** | 0.543** | 0.691** | 0.698** | 0.875** | 0.807** | 0.793** | 0.739** | 0.813** | 0.808** | 1       |         |         |         |         |    |
| 13. Value creation                          | 0.652** | 0.727** | 0.519** | 0.692** | 0.668** | 0.844** | 0.792** | 0.764** | 0.714** | 0.769** | 0.731** | 0.801** | 1       |         |         |         |    |
| 14. Re-evaluation                           | 0.569** | 0.755** | 0.477** | 0.643** | 0.659** | 0.845** | 0.780** | 0.775** | 0.730** | 0.784** | 0.734** | 0.828** | 0.795** | 1       |         |         |    |
| <i>Environment</i>                          |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |    |
| 15. Dynamism                                | 0.339** | 0.414** | 0.274** | 0.378** | 0.257** | 0.446** | 0.443** | 0.349** | 0.424** | 0.363** | 0.414** | 0.453** | 0.397** | 0.402** | 1       |         |    |
| 16. Complexity                              | 0.391** | 0.476** | 0.264** | 0.464** | 0.343** | 0.485** | 0.481** | 0.428** | 0.405** | 0.464** | 0.431** | 0.490** | 0.487** | 0.489** | 0.610** | 1       |    |
| 18. Munificence                             | 0.346** | 0.427** | 0.245** | 0.382** | 0.291** | 0.493** | 0.345** | 0.355** | 0.292** | 0.291** | 0.343** | 0.314** | 0.365** | 0.385** | 0.406** | 0.368** | 1  |

Notes: Correlation is significant at: \*0.05 and \*\*0.01 levels (two-tailed); strategic alliance with suppliers, *n* = 185

|                                             | 1        | 2        | 3        | 4        | 5        | 6       | 7       | 8       | 9       | 10      | 11      | 12      | 13      | 14      | 15      | 16      | 17 |
|---------------------------------------------|----------|----------|----------|----------|----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----|
| <i>SA motives</i>                           |          |          |          |          |          |         |         |         |         |         |         |         |         |         |         |         |    |
| 1. Mov1                                     | 1        |          |          |          |          |         |         |         |         |         |         |         |         |         |         |         |    |
| 2. Mov2                                     | 0.686**  | 1        |          |          |          |         |         |         |         |         |         |         |         |         |         |         |    |
| <i>Asset specificity</i>                    |          |          |          |          |          |         |         |         |         |         |         |         |         |         |         |         |    |
| 3. Intangible asset                         | 0.439**  | 0.543**  |          |          |          |         |         |         |         |         |         |         |         |         |         |         |    |
| 4. Tangible asset                           | 0.615**  | 0.758**  | 1        |          |          |         |         |         |         |         |         |         |         |         |         |         |    |
| <i>Perception of opportunistic behavior</i> |          |          |          |          |          |         |         |         |         |         |         |         |         |         |         |         |    |
| 5. Relational capital                       | -0.606** | -0.645** | -0.402** | -0.570** | 1        |         |         |         |         |         |         |         |         |         |         |         |    |
| 6. Communication                            | 0.737**  | 0.844**  | 0.567**  | 0.751**  | -0.766** | 1       |         |         |         |         |         |         |         |         |         |         |    |
| 7. Trust                                    | 0.624**  | 0.777**  | 0.489**  | 0.669**  | -0.667** | 0.888** | 1       |         |         |         |         |         |         |         |         |         |    |
| 8. Commitment                               | 0.696**  | 0.761**  | 0.524**  | 0.733**  | -0.703** | 0.864** | 0.797** | 1       |         |         |         |         |         |         |         |         |    |
| <i>Interdependence</i>                      |          |          |          |          |          |         |         |         |         |         |         |         |         |         |         |         |    |
| 9. Task interdependence                     | 0.629**  | 0.709**  | 0.497**  | 0.679**  | -0.583** | 0.826** | 0.695** | 0.845** | 1       |         |         |         |         |         |         |         |    |
| 10. Goal interdependence                    | 0.659**  | 0.750**  | 0.413**  | 0.734**  | -0.624** | 0.864** | 0.819** | 0.840** | 0.821** | 1       |         |         |         |         |         |         |    |
| 11. Reward interdependence                  | 0.552**  | 0.706**  | 0.444**  | 0.670**  | -0.611** | 0.824** | 0.793** | 0.780** | 0.739** | 0.852** | 1       |         |         |         |         |         |    |
| <i>SA outcomes</i>                          |          |          |          |          |          |         |         |         |         |         |         |         |         |         |         |         |    |
| 12. Goal achievement                        | 0.702**  | 0.809**  | 0.543**  | 0.739**  | -0.700** | 0.919** | 0.826** | 0.825** | 0.796** | 0.822** | 0.833** | 1       |         |         |         |         |    |
| 13. Value creation                          | 0.708**  | 0.795**  | 0.462**  | 0.700**  | -0.606** | 0.833** | 0.785** | 0.757** | 0.682** | 0.781** | 0.749** | 0.806** | 1       |         |         |         |    |
| 14. Re-evaluation                           | 0.635**  | 0.770**  | 0.405**  | 0.662**  | -0.649** | 0.871** | 0.788** | 0.767** | 0.737** | 0.777** | 0.743** | 0.834** | 0.813** | 1       |         |         |    |
| <i>Environment</i>                          |          |          |          |          |          |         |         |         |         |         |         |         |         |         |         |         |    |
| 15. Dynamism                                | 0.425**  | 0.506**  | 0.223**  | 0.345**  | -0.396** | 0.600** | 0.497** | 0.428** | 0.501** | 0.488** | 0.487** | 0.612** | 0.496** | 0.570** | 1       |         |    |
| 16. Complexity                              | 0.506**  | 0.581**  | 0.219**  | 0.434**  | -0.384** | 0.613** | 0.537** | 0.466** | 0.510** | 0.566** | 0.494** | 0.619** | 0.615** | 0.681** | 0.792** | 1       |    |
| 18. Munificence                             | 0.434**  | 0.431**  | 0.100**  | 0.331**  | -0.265** | 0.428** | 0.379** | 0.306** | 0.257** | 0.322** | 0.278** | 0.383** | 0.484** | 0.460** | 0.604** | 0.629** | 1  |

Notes: Correlation is significant at: \*0.05 and \*\*0.01 levels (two-tailed); strategic alliance with customer,  $n = 75$

**Table V.**  
Bivariate correlations  
for dimensions of the  
studied variables

**Figure 2.**  
Strategic alliance model  
(with suppliers)

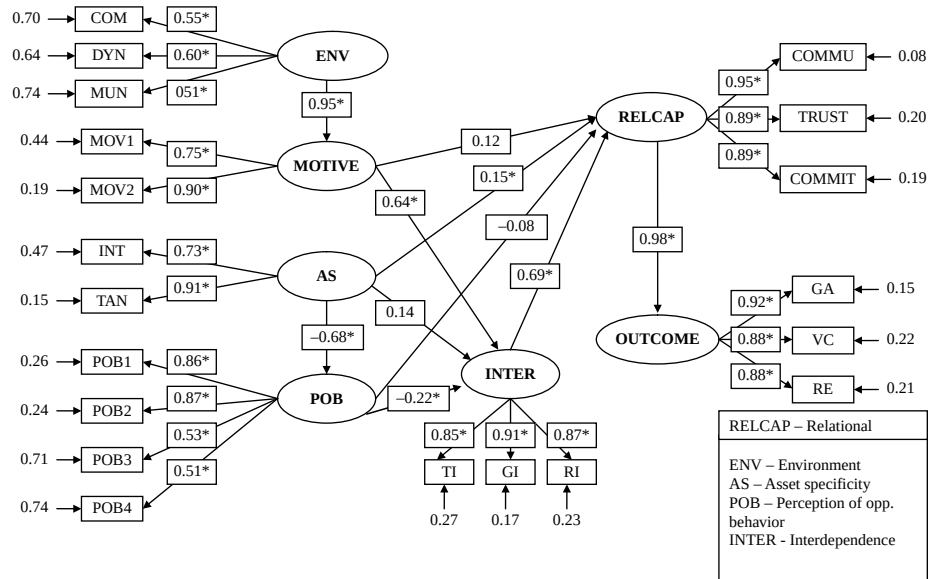
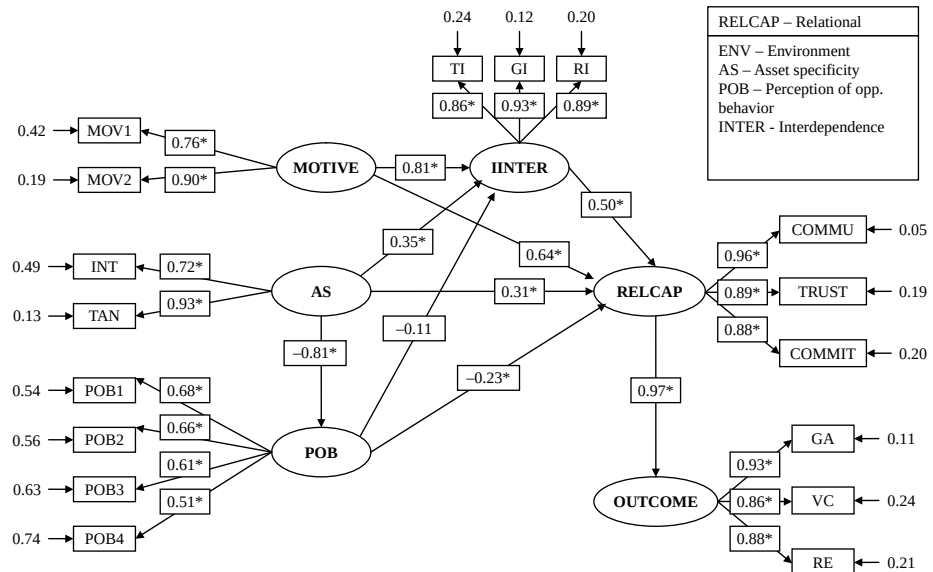


**Figure 3.**  
Strategic alliance model  
(with customers)



( $r = -0.11$ ,  $p > 0.05$ ), implying that perception of opportunistic behavior does not have a significant impact on the interdependence between manufacturers and customers. *H9* is supported ( $r = 0.50$ ,  $p < 0.05$ ), indicating that interdependence between manufacturers and customers increases the relational capital between them. *H10* is supported ( $r = 0.97$ ,  $p < 0.05$ ), implying that relational capital increases the alliance outcomes for the manufacturers.

## 5. Discussion

### 5.1 Strategic alliances with suppliers

The structural model for suppliers consists of two major paths (after taking into account only the significant relationships):

- (1) environment → strategic alliance motives → interdependence between manufacturers and suppliers → relational capital → alliance outcomes; and
- (2) asset specificity → perception of opportunistic behavior → interdependence between manufacturers and suppliers → relational capital → alliance outcomes.

The results indicate that a turbulent and an uncertain environment results in a stronger motivation for the manufacturers to have strategic alliances with suppliers. Alliances are influenced by market (environment) conditions (Perry *et al.*, 2004; Greve *et al.*, 2010). Task, goal, and reward interdependencies are related and shaped by alliance partners and stronger motives result in stronger dependence between partners (Monczka *et al.*, 1998). The strong interdependencies help promote relational capital (trust, commitment, and communication between partners) (Nyaga *et al.*, 2010). The environment and the alliance motives play a vital role in the formation of alliances. But it is the interdependency and relational capital that helps maintain and continue partnerships. Our findings suggest that alliance managers must take positive steps to build trust and must be strongly committed to relationships. They must communicate frequently and share information about demand, product development, technology, and processes. These frequent interactions build trust between alliance partners. The relational capital affects not only the static performance of a strategic alliance – goal achievement and value creation – but is also important for achieving on-going performance. For example, according to McCarter and Northcraft (2007), communication increases the likelihood of supply chain alliance success since it offers an opportunity to elicit promises of cooperation.

Our findings also suggest a relationship between asset specificity and perception of opportunistic behavior. An investment in assets specific to the relationship by the suppliers will make manufacturers lower their guards since the perception of opportunistic behavior is low. This action results in lower monitoring and controlling costs (Williamson, 1985). If a partner firm believes that it will not be exploited, the confidence and enthusiasm to build close relationship is increased (Grover and Malhotra, 2003). This leads to strong dependencies between the partners. High interdependency within collaborations requires joint decision making in task coordination, goal achievement and reward distribution. However, joint decision making can be accomplished successfully only under conditions of trust, commitment and frequent communication (Wong *et al.*, 2005).

From the life cycle perspective, during the initiation phase (initial stage of relationship), the motives to have an alliance and the interdependencies between the manufacturers and the suppliers play an important role. This is when they start developing relationships by exchanging information and entering into short-term transactions (Ring and Van De Ven, 1994; Wagner, 2011). The supply chain managers during this phase must concentrate on identifying the right suppliers and developing them. For the relationship to mature and sustain, relational capital (trust, commitment and communication) plays a significant role. Krause *et al.* (2007) argues that past transactions and prior history of cooperation between the manufacturers and the suppliers have an impact on the relationship outcomes. At this stage, the supply chain

managers must ensure that the firms devote sufficient time and effort to maintain the relationships. The relation-specific investments made by both the parties will strengthen the relationship (Ring and Van De Ven, 1994). During the decline phase, the manufacturers and the suppliers reduce their level of interactions and the relationships undergo a “natural death”.

### 5.2 Strategic alliances with customers

The structural model for customers consists of four major paths (after taking into account only the significant relationships):

- (1) environment → strategic alliance motives → relational capital → alliance outcomes;
- (2) environment → strategic alliance motives → interdependence between manufacturers and customers → relational capital → alliance outcomes;
- (3) asset specificity → perception of opportunistic behavior → relational capital → alliance outcomes; and
- (4) asset specificity → interdependence between manufacturers and customers → relational capital → alliance outcomes.

The relationships that are used for the exposition of strategic alliances with suppliers can also be used for customers. However, the alliance model for customers has some salient differences from the model for suppliers and we highlight these differences. First, the relationship between environment and alliance motives is stronger with suppliers ( $r = 0.95$ ) than for customers ( $r = 0.30$ ). The uncertainty and turbulence in environment will definitely force manufacturers to have strong alliances with suppliers (Perry *et al.*, 2004). This is because the manufacturers need all the help they can get from the suppliers to:

- produce quality products;
- offer competitive price; and
- retain and expand customer base.

Second, the direct relationship between alliance motives and relational capital is significant for alliances with customers but not significant for alliances with suppliers. A recent study by Ahmad *et al.* (2008) provides an explanation for this phenomenon. The authors studied 26 manufacturing firms in Malaysia. Despite the sample size being small, the findings are reflective of the situation in Malaysia. They have indicated that the supplier development programs by the manufacturers appear to be short-term and there are no significant efforts from the manufacturers' side. They have also found that the expertise of the suppliers is not utilized fully. The manufacturers in Malaysia take a long time to develop trust and commitment with suppliers except in cases where there is a strong interdependence (task, goal and reward). But, in case of relationship with customers, manufacturers go an extra mile to develop trust and commitment even if the level of interdependence is not high. Therefore, it is plausible that alliance motives with customers have a direct relationship with relational capital. Third, the direct relationship between asset specificity and interdependence is significant for alliances with customers but not significant for alliances with suppliers. Ahmad *et al.* (2008) allude to the fact that investments on tangible and intangible assets specific to the alliance do not result in strong interdependencies between suppliers and manufacturers

in Malaysia. They go to the extent of implying that manufacturers spend little time and effort in the development of their suppliers. But for alliances with customers, asset specificity results in strong interdependence between manufacturers and customers. Fourth, the inverse relationship between perception of opportunistic behavior and relational capital is significant for alliances with customers but not significant for alliances with suppliers. The Malaysian manufacturers take extra precautions in ensuring that they maintain close relationships with their customers. Any move from the customers that indicates opportunistic behavior can make manufacturers lower their guard and reduce the level of relational capital. With suppliers, the level of relational capital increases only when there are strong interdependencies between manufacturers and suppliers. Fifth, the inverse relationship between perception of opportunistic behavior and interdependence is significant for alliances with suppliers but not significant for alliances with customers. As mentioned earlier, any indication of opportunistic behavior on the part of suppliers makes manufacturers in Malaysia lower their level of interdependencies.

From the life cycle perspective, during the initiation phase (initial stage of relationship), the motives to have an alliance and the interdependencies develop into a stronger relationship between the manufacturers and the customers. This phase is critical since any perception of opportunistic behavior may jeopardize the long-term relationship. The supply chain managers during this phase must concentrate on developing a closer relationship with the customers. For the relationship to mature and sustain, relational capital plays a significant role. At this stage, the supply chain managers must ensure that the firms devote sufficient time and effort, without getting involved in any opportunistic behavior, to maintain the relationships. The relation-specific investments made by the manufacturer at this stage will strengthen the relationship. Integration with customers is a key driver of performance for any firm (Flynn and Heung, 2007). During the decline phase (when the product may be discontinued), the manufacturers and the customers reduce their level of interactions and the relationships fade away in due course of time.

## 6. Conclusions, limitations and directions for future research

Strategic alliances are a significant component of companies' critical strategies used by business managers to achieve competitive advantage (Sambasivan and Nget-Yen, 2010). In this research, we have used the framework that has eclectically combined five theories (transaction cost economics, resource-based theory, contingency theory, social exchange theory, and personal relationship theory) to address the formation and maintenance of strategic alliances. A structural model has been constructed and tested using SEM approach. The model has been run from manufacturers' perspective in the manufacturing sector in Malaysia. Our study has extended the findings of earlier studies (Parkhe, 1993; Song and Panayides, 2002; Yasuda, 2005; Wagner, 2011; Young-Ybarra and Wiersema, 1999) by developing and analyzing a comprehensive framework using the life cycle approach proposed by Kale and Singh (2009). Unlike other studies, this study has studied and compared strategic alliances with suppliers and customers. The main contributions of this paper are:

- an integrated approach to model strategic alliances;
- a comparison between the strategic alliances with suppliers and customers; and
- a study from a developing country.

What are the key differences in the strategic alliances with the suppliers and the customers? The key differences are in the roles of alliance motives, asset specificity and perception of opportunistic behavior and the differences are:

- the alliance motives with suppliers become stronger in the presence of a turbulent environment;
- the impact of alliance motives on relational capital is higher for customers;
- the impact of asset specificity (investing in dedicated assets) on interdependence is higher for customers;
- the effect of perception of opportunistic behavior on relational capital is higher for customers; and
- the effect of perception of opportunistic behavior on interdependence is higher for suppliers.

What are the key similarities in the strategic alliances with the suppliers and the customers? The similarities are in the roles of interdependence and relational capital. The success of the strategic alliances with the suppliers and customers requires a high degree of interdependence and relational capital with the manufacturer.

This study is not without limitations. First, the study has included only the manufacturing sector. Similar studies in the service sector can help us understand the factors influencing formation and maintenance of strategic alliances. Second, this study has validated the structural model using cross-sectional data. In order to test the causal effect of relationships, it will be useful to conduct longitudinal studies. Third, the model does not include an important factor in strategic alliances, the culture. Although Sambasivan and Nget-Yen (2010) have studied the effect of culture on strategic alliances, the study is in isolation. The future studies must include culture as a construct in the model to understand strategic alliances completely. Fourth, the study has been carried out in one country. A cross-country study with developing and developed countries will help validate the model. Fifth, the sample size for the customer model is low. Some of the fit indices of SEM like  $\chi^2$ , TFI and IFI are sensitive to sample size. Lower sample sizes tend to lower the values of the indices (Chan *et al.*, 2007). The current estimates of fit indices for the customer model may not be accurate.

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(The Appendix follows overleaf.)

| Items                                                                                                                                                                                                                                                                                                                                                                                                                           |              | Constructs  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------|
| (1) There are many firms competing in the same market with us<br>(2) The competition in our business environment is stiff<br>(3) Our firm needs to strive to outperform others in the industry                                                                                                                                                                                                                                  | COM          | Env         |
| (1) The environment in which our firm operates is unstable<br>(2) The rate of unpredictable environmental change is high<br>(3) The environment is changing                                                                                                                                                                                                                                                                     | DYN          |             |
| (1) The availability of critical resources in the market is low<br>(2) It is difficult to obtain resources that we need from the environment which our firm operating in<br>(3) We have many choices when it comes to the acquisition of resources                                                                                                                                                                              | MUN          |             |
| (1) The alliance aims to use other's tangible assets, e.g. land, raw material<br>(2) The alliance aims to use other's intangible assets, brand name, copy right<br>(3) The alliance aims to gain access to other's technological infrastructure<br>(4) The alliance aims to gain access to new markets                                                                                                                          | MOV1         | Motive      |
| (1) The alliance aims to gain access to other's technological skills<br>(2) The alliance aims to gain access to other's managerial skills<br>(3) The alliance aims to gain access to other's knowledge, e.g. know-what, know-how<br>(4) The alliance aims to develop new skills                                                                                                                                                 | MOV2         |             |
| (1) The company has dedicated administrative personnel specifically to the strategic alliances<br>(2) The company has dedicated technical personnel specifically to the strategic alliances                                                                                                                                                                                                                                     | INT          | AS          |
| (1) The company has dedicated technical equipment specifically to the strategic alliances                                                                                                                                                                                                                                                                                                                                       | TAN          |             |
| (1) They have always provided us a completely truthful picture of their businesses ( <i>reverse scored</i> )<br>(2) Our partners perform their duties even if we do not check up on them. ( <i>reverse scored</i> )<br>(3) Our partner has sometimes promised to do things without actually doing them later                                                                                                                    | POB1<br>POB2 | POB         |
| (4) They seem to feel OK about doing anything within their means that will help further their firm's interest                                                                                                                                                                                                                                                                                                                   | POB3<br>POB4 |             |
| (1) Our firm and our partner firm depend heavily on the information from each other for task completion<br>(2) Our firm and our partner firm depend heavily on the means, e.g. techniques and facilities, from each other from the completion of tasks<br>(3) The dependency on our partner and for the exchange of information or/and means is so critical that its absence would hamper satisfactory achievement of our goals | TI           | Interdepend |
| (1) We "swim and sink" with our partner firm<br>(2) We seek compatible goals with our partner firm<br>(3) Our goals and those of our partner firm go together<br>(4) When we work together with our partner, we usually have common goals                                                                                                                                                                                       | GI           |             |

Table AI.

(continued)

| Items                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Constructs |                    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|
| (1) The success of our firm has little impact on our firm<br>(2) Our goal achievement is significant to our partner<br>(3) Our reward achievement is dependent on the achievement of our partner firm                                                                                                                                                                                                                                                                                                                                                                                     | RI         |                    |
| (1) We are committed to the relationship with our partner firm<br>(2) The relationship that our firm has with our partner firm is something our firm intends to maintain indefinitely<br>(3) The relationship that our firm has with our partner firm deserves our firm's maximum effort to maintain                                                                                                                                                                                                                                                                                      | Commit.    | Relational capital |
| (1) When we encounter difficulties or new situation, our firm does not feel worried or threatened by letting out partner firm do what it wants<br>(2) Our firm is familiar with the patterns of behavior our partner firm has established, and we can rely on them to behave in certain ways<br>(3) We have found that our partner firm is dependable<br>(4) Our partner firm cannot be trusted at times ( <i>reverse scored</i> )                                                                                                                                                        | Trust      |                    |
| <i>Information quality</i><br>(1) Timeliness, (2) accuracy, (3) adequacy, (4) completeness, (5) credibility                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Communicat |                    |
| <i>Information participation</i><br>(1) We actively seek advice and information from our partner<br>(2) The partner firm participates in our planning and goal setting activities<br>(3) We participate in the partner firm's planning and goal setting activities<br>(4) We actively encourage improvement suggestion from our partner                                                                                                                                                                                                                                                   |            |                    |
| <i>Information sharing</i><br>(1) Our partner firm share proprietary information with us<br>(2) We inform our partner firm in advance of changing needs<br>(3) In our relationship, it is expected that any information which might help the other party will be provided<br>(4) The parties are expected to keep each other informed about events or changes that may affect the other party<br>(5) It is expected that the parties will only provide information according to pre-specified requirement<br>(6) The partner keep us fully informed about issues that affect our business |            |                    |
| (1) We are able to accomplish the goals of our strategic alliances<br>(2) We are satisfied with what we want from the strategic alliances<br>(3) The strategic alliance helps us to realize our business objectives                                                                                                                                                                                                                                                                                                                                                                       | GA         | Outcome            |
| (1) The strategic alliance builds new business opportunities/new products<br>(2) The strategic alliance accesses skills and learning for future competitive advantages<br>(3) The strategic alliance improves supplier or customer relationship<br>(4) The strategic alliance creates advantages networks with other firms<br>(5) The strategic alliance improves productivity<br>(6) The strategic alliance improves profitability                                                                                                                                                       | VC         |                    |
| (1) This strategic alliance is still the right one even when we consider other activities that may have changed since we started it                                                                                                                                                                                                                                                                                                                                                                                                                                                       | RE         |                    |

(continued)

Table AI.

Table AI.

| Items                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Constructs |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| (2) When we look at the other partner options, this partner firm is the right one considering what is really involved                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |
| (3) The subject matter for this strategic alliance is still valid                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            |
| (4) This strategic alliance relationship has become so important that we need to dedicate designated resources for this relationship                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |
| <b>Notes:</b> Env – environment, COM – complexity, DYN – dynamism, MUN – munificent, Motive – strategic alliance motive, MOV1 – property-based resource acquisition, MOV2 – knowledge-based resource acquisition, AS – asset specificity, INT – intangible assets, TAN – tangible assets, POB – perception of opportunistic behavior, Interdepend – interdependence, TI – task interdependence, GI – goal interdependence, RI – reward interdependence, Commit. – commitment, Communicat. – communication, Outcome – strategic alliance outcomes, GA – goal achievement, VC – value creation, RE – re-evaluation |            |

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