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Building Producer Loyalty in Malaysia's Fresh Milk Supply Chain

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Abstract

This study contributes to the agribusiness supplier relationship management literature both empirically and theoretically. The paper presents results from a survey of 133 dairy producers in Malaysia, and paper identifies how Malaysian milk buyers can build a loyal customer base with their suppliers as a means to secure uninterrupted milk supplies. A structural equation model was conducted to test the conceptual model using AMOS 17.0 software. The results show that whereas timely and collaborative communication, price satisfaction and cultural fit influence positively suppliers contractual and competence trust in their buyers, power dependency negatively influences competence trust. Furthermore, suppliers trust in their buyers will eventually lead to loyalty. The principal implication is that milk processors and other buyers need to engage in collaborative communication with the dairy farmers to ensure continuous and uninterrupted supply.

Keyword: Business to Business, Trust, Loyalty, Dairy Industry, Malaysia

Introduction

Like other Asian countries, rapid income growth, expanding urbanization and ongoing diet transformation are placing increasing pressure on high value agricultural supply chains in Malaysia. In particular, dairy processors struggle to source sufficient and regular milk supplies. One strategy processors are considering is establishing and maintaining supplier loyalty.

In the business-to-consumer market, customer loyalty refers to repeat purchasing behaviour and buyer recommendations (Rauyruen & Miller, 2007; Zeithaml, *et al*., 1996). Previous research emphasises that customer loyalty should be taken seriously in any business relationships (Baldinger & Rubinson, 1996; Rauyruen & Miller, 2007). Retaining customers over the long run yields greater firm profits. Kotler *et al* (2006), for instance, argue the importance of customer loyalty by demonstrating that firms can improve profits from between 25 per cent to 85 per cent if they are able to lower customer defections by 5 per cent.

In the agribusiness context, gaining, managing and maintaining loyal suppliers offers a number of advantages to processors, including more consistent supplies, lower transaction costs, enhanced efficiency and reduced post-harvest losses particularly for perishable products such as fresh milk (Williamson, 1979; Batt, 2003). In the Malaysian dairy industry, supplies often fall short of processor demand. Milk supplies are normally based on a memorandum of understanding (MOU) between the dairy producers and the processors; however, these MOUs are not enforceable. The result is multiple markets for the producers who choose whom they want to sell to depending on the market conditions. Whereas most producers sell their milk to the government through the milk collection centre (MCC), other producers sell their milk through milk agents or directly to restaurants (mostly Indian restaurants). Finally, a third channel is milk processors, including firms such as Dutch Lady Milk Industries Berhad, Susu Lembu Asli and Sabah International Dairies.

Although the idea of loyalty in business relationships is beneficial in buyer-seller relationships, most literature concentrates on buyer behaviour (Ulaga and Eggert, 2006). Much less emphasis is placed on analysing the process of buyer selection by suppliers. The result is an inadequate understanding of the needs, wants and preferences of sellers. Ramsay and Wagner (2009) argue that switching the emphasis from the buyers or customers needs and wishes to those of the suppliers provide opportunities to reduce conflict in buyer-seller interactions and improve joint trading performance.

The research presented in this paper suggests that factors which enhance supplier loyalty in the Malaysian fresh milk supply chain are essential to encourage long-term investments and facilitate building, developing and maintaining long-term relationships between the milk producers and their buyers. This paper aims to explore the nature of supplier loyalty in the Malaysian dairy supply chain and to identify how milk buyers induce dairy producers to stay in relationships to enhance long-term and continuous milk supplies.

The next section presents an overview of the Malaysian dairy industry. Section 3 explains the theoretical and conceptual methods. Section 4 outlines the research methods and Sections 5

presents the results. Section 6 discusses the papers implications. The final section presents a summary, describing the studys limitations.

Overview of the Malaysian Dairy Industry and Research Context

The dairy industry in Malaysia is supported and subsidised by the Malaysian Government through the Department of Veterinary Services. The government introduced the Dairy Project Scheme (DPS) in the late 1980s with the main objectives to assist small-scale dairy producers produce and market their milk and to stimulate rural development (Wells, 1981). Since that time, the dairy industry has been expanding.

The Malaysian Government provides services such as extension, training and guidance to the producers (Jelan & Dahan, 1998). Veterinary services and dairy cows are usually provided by the Government and, in most cases, the government maintains ownership of the animals. In some states, dairy cows are sold to producers at subsidised prices (Bhaskaran, 1999). The Government also provides information on dairy management and production advice to enhance productivity and quality.

Over time, domestic fresh milk production has stagnated while the demand for milk-based products continues to increase. These increasingly scarce supplies relative to demand are encouraging processors and other milk buyers to search for mechanisms, such as buyer loyalty, in an effort to meet milk demand at the food retail level. The output, consumption and self-sufficiency of the Malaysian fresh milk for the past five years are summarised in Table 1.

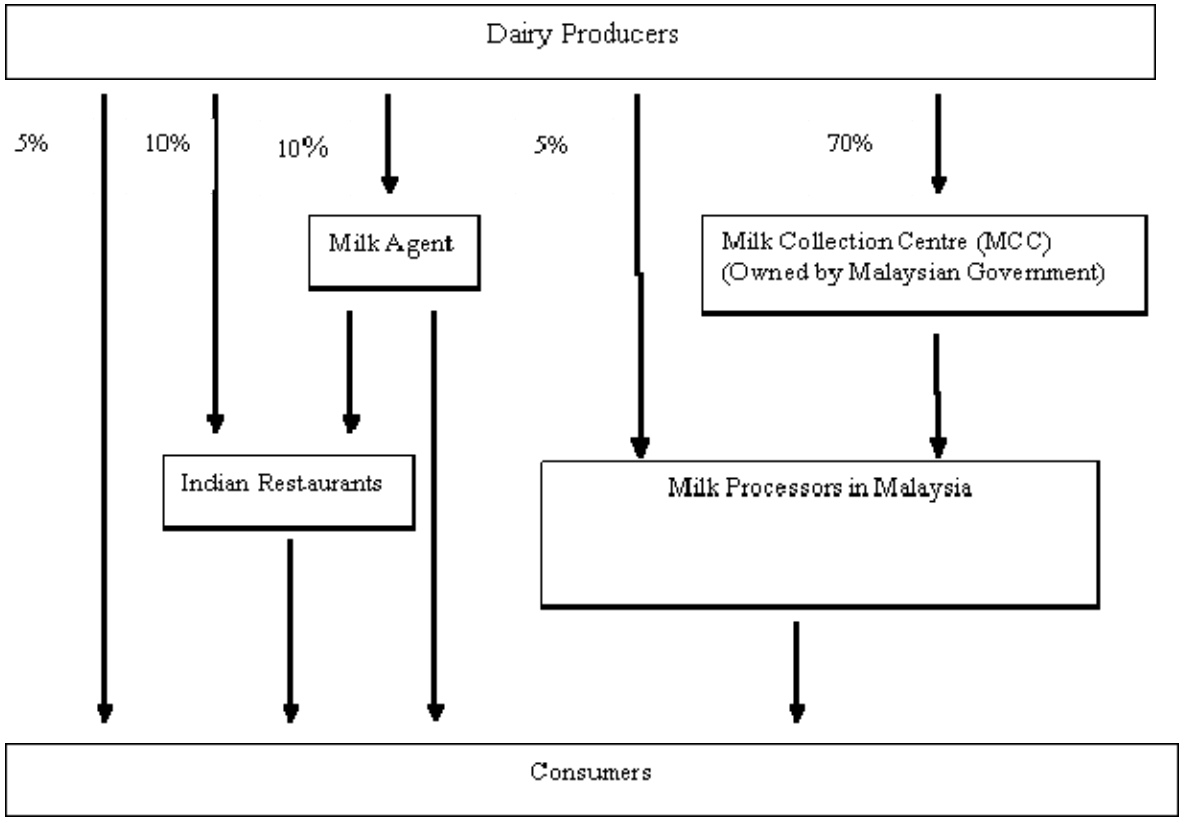
Table 1: Output, consumption and self-sufficiency of Malaysian fresh milk

Fresh Milk	2004	2005	2006R	2007R	2008P
Production (mil.litres)	38.77	41.10	45.45	51.07	56.49
Consumption (mil.litres)	1,300.47	895.06	975.81	1,067.13	1,155.53
Self-sufficiency (%)	2.98	4.59	4.66	4.79	4.89

Source: Adapted from the Department of Veterinary Services, Malaysia R: revised P: Provisional

The government is the main buyer of milk, purchasing fresh milk from producers based on graded milk prices. It then markets the milk to either state-owned enterprises or private processors through the Milk Collection Centres (MCC). This arrangement does not restrict producers from selling their milk to other buyers as there is no formal contract between the government and producers. As a result, there are multiple market channels for producers who usually choose whom they sell to depending on the market condition. (See Figure 1).

Figure 1: Malaysian fresh milk supply chains



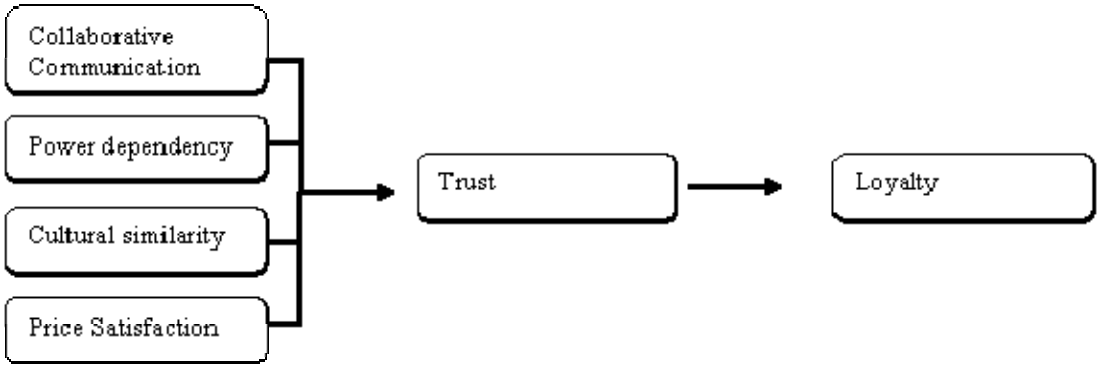
Source: Research Survey, 2009

Because producers are not obligated legally to sell their milk to a particular buyer, it becomes more difficult for processors and other buyers to predict and manage their supply flows, making it difficult to plan. Given the tight and uncertain supply, processors consider that working more closely with producers to build a stronger relationship is one way to reduce their switching behaviour and to obtain a continuous and constant milk supply (Rauyruen & Miller, 2007). How this supplier loyalty can be built is the main focus of this article.

Theoretical Background and Conceptual Framework

The conceptual model is shown in Figure 2. The perceived relational norms of producers will influence the perception of their trust in buyers, influencing their level of loyalty. The variables utilised are selected based on literature on inter-firm relationship performance, including Anderson and Narus (1990), Batt (2003), Maztler *et al* (2006) and Gyau and Spiller (2007a). The paper discusses the main components of Figure 2 and derives testable hypotheses in the following section.

Figure 2: Conceptual framework of supplier loyalty in the Malaysian dairy supply chain



The nature of loyalty

Loyalty can be divided into three categories: behavioural loyalty (Jacoby & Chestnut, 1978), attitudinal loyalty (Bennett & Rundle-Thiele, 2002) and composite loyalty (Baldinger & Rubinson, 1996; Rauyruen & Miller, 2007). Behavioural loyalty refers to a pattern of repurchases of the same products, such as when a customer stays loyal to the same brand name or services. Attitudinal loyalty is related to a customers attitude towards certain products and services. For instance, when a customer provides constant word-of-mouth advertising and recommending the brand to others (Zeithaml, *et al*., 1996). Some researchers argue that customer loyalty cannot be explained by examining customer behaviour in isolation from customer attitudes and vice versa. Rather, to gain an understanding of loyalty, behavioural and attitudinal loyalty should be considered. Composite loyalty assumes that loyalty can only be seen when a customer both continuously purchases or uses the same product and recommends to others that they buy the same products (Baldinger & Rubinson, 1996; Rauyruen & Miller, 2007).

In customer-buyer relationships, the act of loyalty may improve business competition and profitability (Rowley, 2005). Over time, it encourages word-of-mouth marketing and eventually lowers marketing costs (Dick & Basu, 1994). In business-to-business relationships, achieving behavioural and attitudinal loyalty stimulates long-term relationships with the exchange partner (Rauyruen & Miller, 2007) and enhances sustainable business environment in the future (Caceres & Paparoidamis, 2005). Rauyruen and Miller (2007) explain that composite loyalty in the business-to-business relationships can be measured through purchase intentions and attitudinal loyalty.

The loyalty concept presented in this literature focuses mainly on the loyalty of buyers to the suppliers of goods and service. To explain the loyalty of suppliers to their buyers, we propose a mirror reflection of the meaning of customer loyalty and define supplier loyalty in the Malaysian dairy industry as the motivation of dairy farmers to continuously sell milk and engage in long-term relationships with their buyers. In this research, we explore the behaviour and attitudes of suppliers toward their buyer, including whether they recommend the buyer to others and do repeat business with the same buyer.

The relationships between trust and loyalty

Trust has been widely discussed and explored in the literature (Ghosh & Fedorowicz, 2008; Kwon & Suh, 2004; Moorman, *et al.,* 1993; Morgan & Hunt, 1994; Sako, 1997). Moorman, *et al*. (1993) define trust as the willingness to rely on an exchange partner in whom one has confidence. Morgan and Hunt (1994) conceive trust as existing when one party has confidence in an exchange partners reliability and integrity. Ghosh and Fedorowicz (2008) explain that trust reflects the confidence of one party in a two-way relationship so that the other party will not exploit its vulnerabilities.

In contractual relationships, trust is shown to encourage contract self-enforcement (Gow, *et al*., 2000), to reduce opportunistic behaviour (Morgan & Hunt, 1994), to lower transaction costs (Sartorious & Kirsten, 2007), and, most importantly, to improve business performance (Sako, 1997). Gow, *et al*. (2000) emphasise that the presence of trust in a relationship can change contract characteristics, arguing that trust eliminates the need for bureaucratic involvement in contract enforcement and at the same time reduces transactions costs such as legal fees.

Various dimensions of trust are presented in the literature with no consensus on what constitutes the main dimensions. Sako (1997) identifies three types of trust: competency trust, contractual trust and goodwill trust. Contractual trust rests on a shared moral norm of honesty and promise keeping. Competency trust requires a shared understanding of professional conduct and technical managerial standards. Goodwill trust can exist only when there is consensus on the principle of fairness (Sako, 1997, p.3). In this study, trust is viewed as a higher order construct made up of competency, goodwill and contractual trust.

Trust plays an important role in business relationships particularly in building loyal customers. Rauyruen and Miller (2007) observe that customer trust influences positively customer loyalty. Based on the above discussion we propose that:

> H1: The competence-goodwill trust of the dairy producers will have a positive influence on the level of their loyalty to the buyer.
>
> H2: The contractual trust of the dairy producers will have a positive influence on the level of their loyalty to the buyer.

Collaborative communication: Mohr and Nevin (1990) state that relational problems occur because of communication difficulties and they describe communication as the glue that holds together a channel of distribution (Mohr and Nevin, 1990, p.36). They formulated collaborative communication consisting of content, medium, feedback and frequency. Collaborative communication is likely to occur in market channel conditions of relational structures like the Malaysian dairy industry. Collaborative communication may improve business relationships between exchange partners. Prahinski and Benton (2004, p 60) found that when the buying firm uses collaboration communication for the supplier development progress it is perceived by the supplier as an effective mechanism to improve buyer-seller relationship. They concluded that

collaborative communication influences indirectly business strategy, the formality of the relationship and the frequency of feedback.

Moorman, *et al*. (1993) further argue that communication fosters trust building, thus helping to solve relationship problems. In the context of the Malaysian dairy industry, frequent dissemination of production and market based information such as information on new breeds and high yielding cows and new methods of milking are likely to enhance the level of trust.

We therefore hypothesise that:

> H3a: Collaborative communication has a positive influence on the dairy producers trust of the competence-goodwill of their buyers.
>
> H3b: Collaborative communication has a positive influence on the dairy producers contractual trust in their buyers.

Dependency: dependency refers to the degree of reliance or dependence that one business has on another (Achrol, 1997; Heide & John, 1992). Emerson (1962) views dependency as (1) directly proportional to As motivational investment in goals mediated by B, and (2) inversely proportional to the availability of those goals to A outside of the A-B relation. Basically, the act of dependency between firms occurs due to market imbalance and uncertainty (Heide, 1994; Pfeffer & Salancik, 1978). However, the level of dependency between firms over time creates power asymmetry. The unbalanced power occurs when one exchange partner has more resources than the other (Achrol, 1997; Heide & John, 1992). In fact, the interdependent firms may posit power exploitation which will decrease the level of trust between exchange partners (Batt, 2003; Gyau & Spiller, 2007a). Since both constructs (dependence and power) are related, in this paper we refer to dependency as producers power dependence relative to their buyer. We propose that:

> H4a: Power dependency reduces dairy farmers trust of the competence-goodwill of their buyers.
>
> H4b: Power dependency reduces dairy producers contractual trust in their buyers.

Cultural Similarity: Culture can be defined as the dominant and continuing values, attitudes and behaviours of a group (Munter, 1993) and is shown to facilitate high levels of understanding between partners. Zabkar and Brencic (2004) and Gyau and Spiller (2007b) find a positive relationship between culture and trust. Since Malaysia is a multicultural country, cultural similarities may lead to closer relationships and increase the level of trust between partners. Considering previous research, we propose the following hypotheses:

> H5a: Cultural similarity has a positive influence on the dairy farmers trust of their buyers competence-goodwill.
>
> H5b: Cultural similarity has a positive influence on the dairy farmers contractual trust in their buyers.

Price Satisfaction: Generally, price satisfaction refers to a positive affective state resulting from price-related factors. Matzler, *et al*. (2007) stated that price satisfaction is a five-dimension construct: price-quality ratio, price fairness, price reliability, price transparency and relative price. However, other researchers have conceptualised price satisfaction as a single variable (Gyau & Spiller, 2007a; Munnukka, 2008). Gyau and Spiller (2007a) study the determinants of trust between Ghanaian exporters of fresh fruits and vegetables and their importers in Europe finding that price satisfaction positively influences the level of trust. The authors proposed that buyers should provide a reasonable and fair price to sellers to create a high degree of trust between them. Based on this, we propose that:

> H6a: Price satisfaction has a positive influence on the dairy farmers trust of the competency-goodwill of their buyers.
>
> H6b: Price satisfaction has a positive influence on the dairy farmers contractual trust in their buyers.

Methodology

Survey design

Information was collected through a survey of dairy producers in Malaysia during June and July, 2009. A database of dairy producers was obtained from the Department of Veterinary Services, Malaysia. In all, there were 550 farmers.
Based on the database, four states were selected for the study, namely, Johor, Melaka, Sabah and Selangor. The four selected states provide a representative overview of dairy farm operations throughout Malaysia as they represent the various forms of marketing channels. The various scales of operation in Malaysia are found in the four selected states. In total 133 farmers out of the population of 550 participated in the survey.
The questionnaire was designed based on a two-step approach. The first stage was a qualitative exploratory study consisting of a literature review, field visits, key-informant interviews (Phillips, 1981) and interviews with relevant agencies (public and private institutions). This stage was undertaken to understand the dynamics of dairy producer-buyer relationships and to develop the questionnaire.
In the second stage, the questionnaire was pre-tested with three supply chain and alliance specialists and 10 dairy producers. Respondents were asked to provide feedback on the length, content, format, comprehensibility and accuracy of the survey instrument. After each stage, the questionnaire was modified, incorporating the feedback.

The face-to-face interviews were conducted at the respondents premises, and lasted between 45 minutes to 1 hour. In total, 133 successful interviews were conducted by 5 trained enumerators. To ensure consistency, producers were asked to evaluate the relationship with their main buyer, defined as the buyer who purchases the largest quantity of their fresh milk.

Respondents profile

Based on the in-depth interview with the Department of Veterinary Services officer, we were informed that most of the farmers have been in the business for more than 10 years and the levels of education were mainly to primary or secondary school. Therefore, based on our observation and survey, the respondents profile is quite representative of this industry.
The majority of respondents were men, with an average age of 45 and with 13 years of experience in the dairy farm business. The herd size averaged 85 cows, with the largest herd having 2,455 cows. The average milk yield (per day) is 10 kg per cow; the highest milk yield is 28 kg and the lowest milk yields around 2 kg. Breeds of cows are diverse, ranging from pure breeds such as Holstein-Friesian and Jersey to mixed breeds such as Sahiwal-Friesian crosses. The firm size and level of producers level of education are summarized in Table 2 below.

Table 2: Number of producers according to firm size and level of education

Firm Size	Number of producers	Percentage
Small-scale (0-30 cows)	57	42.9
Semi-commercial (31-50 cows)	25	18.8
Commercial (51 -100 cows)	31	23.3
Large-scale (101 and above cows)	20	15.0
Level of education	Number of producers	Percentage
Primary and secondary education	105	78.9
Diploma and certificate education	23	17.3
Tertiary education	5	3.8

Operationalisation of the constructs

The measurement scales for the constructs were developed from the literature on inter-firm relationship performance. The trust variable was developed using an adaptation of the measures used by Batt (2003) and Gyau and Spiller (2007a). The loyalty variable was developed based on the dimensions utilized by Rauyruen and Miller (2007) and Jacoby and Chestnut (1978).

The relational variables made up of collaborative communication, power-dependence, cultural fit and price satisfaction were adapted from the literature including Anderson and Narus (1990), Mohr and Nevin (1990), Batt (2003), Maztler *et al* (2006) and Gyau and Spiller (2007b).

In all cases, questions based on a five point Likert-scale, ranging from: 1=strongly disagree, 2= disagree, 3= partly/disagree, 4=agree and 5 =strongly agree, were used to measure the various latent constructs of the relational variables, trust and loyalty. The mean and standard deviation for each item are shown in Table 1 in Appendix 1.

Results

Principal component analysis and reliability tests

The statistical analyses were done in two stages. First, Principal Component Analyses (PCA) with varimax rotation was used to determine the dimensionality of the variables used in the model. All factors with Eigen values above 1 were extracted. In addition, all factors with factor loadings above 0.5 were retained. To test for the appropriateness of the factor analysis for the scale, the Kaiser-Meyer-Olkin Measure of Sampling adequacy (KMO-MSA) was conducted and all fell within the accepted region (KMO is greater than or equal to 0.5). A reliability test using the Cronbach Alpha was conducted to purify the measurement scale for each of the constructs used in the study. The alpha coefficients for all components were above the conventional cut off point of 0.60. The results of the factor analysis are shown in Table 2 in Appendix 2.

The result of the PCA shows that there are two types of trust in the Malaysian dairy industry. These are competence-goodwill trust and contractual trust. Communication, power dependency, cultural similarity and price satisfaction variables show unidimensionality with factor loadings ranging from 0.672 to 0.901. The alpha coefficient for each variable was within the acceptable range at α=0.786, α=0.731, α=0.672 and α=0.821 respectively for collaborative communication, power dependency, cultural similarity and price satisfaction. The results of the PCA indicate that loyalty is a unidimensional construct with alpha value α=0.676.

Structural equation modelling

To gain insights into the various influences and relationships, we used structural equation modelling with AMOS 17.0, a software package which supports data analysis techniques known as structural modelling, analysis of covariance structures, or causal modelling. It has been widely used to test relationship models (Rauyruen & Miller, 2007; Reynolds, *et.al.*, 2009). Structural equation modelling makes it possible to test a set of regression equations simultaneously, providing both parameter statistics for each equation and also indices which indicate the fit of the model to the original data.

We assessed model fit using five indices: the chi-square (χ) test; the comparative fit index (CFI); the Tucker-Lewis index (TLI); the parsimony goodness-of-fit-index (PGFI) and the root-mean-square error of approximation index (RMSEA) (Byrne, 2001; Hu & Bentler, 1999). The Chi-square value indicates the absolute fit of the model to the data. In this analysis, measurement model the χ/df was 2.095 and p=0.00, which is well within the acceptable range. CFI compares the discrepancy function of the hypothesised model to the one of a baseline model while TLI compares the absolute fit of the specified model to the absolute fit of most restrictive model possible, in which all the relationships between the observed variables are assumed to be zero (Byrne, 2001).

PGFI, however, takes into account the complexity of the hypothesised model in the assessment of overall model fit. Typically, parsimony-based indices have lower values (0.5 and above) than the threshold level of other perceived acceptable for other indices of fit (Byrne, 2001). The

models fit, as indicated by all of these estimates, was acceptable (CFI=0.810, TLI=0.783, PGFI=0.622).

The root mean square error of approximation is based on a comparison of the values in the specified model to population means and covariance structures. Arbuckle and Wothke (1999) stated that a value of 0.08 or less would indicate a good fit model. Since the model in Figure 2 has an RMSEA of 0.088, this statistic provides further evidence that the model has a good fit. Even though both CPI and TLI measurement fell marginally short of the benchmarking 0.9 indicating good model fit, the other indices considered were all within the acceptable range. The results of the measurement model are indicated in Figure 3 and Table 3.

Table 3: Results of hypothesis testing using AMOS 17.0

Hypothesis		Proposed Relationships		Estimate	Hypothesis Supported
H1	Competence-goodwill Trust (CGT)		Loyalty (L)	0.147***	Yes
H2	Contractual Trust (CT)		Loyalty (L)	0.160**	Yes
H3a	Collaborative Communication (CC)		Competence-goodwill Trust (CGT)	0.545***	Yes
H3b	Collaborative Communication (CC)		Contractual Trust (CT)	0.495***	Yes
H4a	Power Dependency (PD)		Competence-goodwill Trust (CGT)	-0.389**	Yes
H4b	Power Dependency (PD)		Contractual Trust (CT)	-0.142	No
H5a	Cultural Similarity (CS)		Competence-goodwill Trust (CGT)	1.464***	Yes
H5a	Cultural Similarity (CS)		Contractual Trust (CT)	0.320***	Yes
H6a	Price Satisfaction (PS)		Competence-goodwill Trust (CGT)	0.021	No
H6b	Price Satisfaction (PS)		Contractual Trust (CT)	0.340***	Yes

*** Significant at 0.01, ** significant at 0.05

Discussion

The conceptual model tests suggest that supplier loyalty is influenced by either of the two trust dimensions and that trust is influenced by some relational variables. The results indicate that both contractual and competence trust influence supplier loyalty, indicating that trust is an essential element which enhances loyalty. This is consistent with the study by Rauyruen & Miller (2007) who found that trust in the supplier improves loyalty.

Furthermore, the results indicate that collaborative communication and cultural similarity influence both contractual and competence-goodwill trust. Power dependency influences competence-goodwill trust and price satisfaction influences only contractual trust. Specifically, we find that collaborative communication (H3a and H3b) influences strongly both dimensions of trust, indicating that frequent communication, information sharing and adequate feedback are perceived to be essential for dairy producers in Malaysia. Milk buyers that emphasize site visits, sharing important information such as market prices and adopt frequent communication with the exchange partner will eventually build suppliers trust and loyalty.

Cultural similarity also influences both contractual and competence trust, indicating that milk producers tend to trust buyers who share the same cultural practices and values both in business and social perspectives. This is especially the case in peninsular Malaysia where the majority of the milk producers are Malaysian Indians. Although the Malaysian government policies that encourage nation building attempt to create a common culture, the so called Malaysian culture, issues of subcultures transcending social to business practices are still prevalent in many parts. Consequently, most producers have the tendency to trust buyers who practice and share similar values such as religious beliefs and ethnicity-related practices. These similarities may facilitate open communication, strengthen personal relationships and foster high levels of commitment (Cohen, 2007) which subsequently enhance trust.

Power dependency has a negative influence on competence-goodwill trust but has no significant influence on contractual trust. The latter contrasts with many other studies in buyer-seller relationships which suggest a negative relationship between the use of power and trust. The picture in the Malaysian case is quite understandable because most dairy producers do not experience excessive use of power or perceive an over-dependence on one particular buyer for their milk. This may be due to the fact that the Malaysian government, through its MCCs, procures the largest quantity of all the milk. The government provides this service purposely to assist farmers and not for a direct profit motive. Furthermore, the non-government buyers are not able to over-exploit their power situation since the farmers are not dependent on them. In view of this, both the government and the non-government buyers are evaluated by the farmers as fulfilling their promises and not using their power advantage to manipulate them.

The negative influence of dependency on competent trust suggests that where the farmers feel that they are over-dependent on the buyers, they are more likely to evaluate the buyers competency lower and vice versa. This is particularly true because dependency breeds imbalance in power situations and when the dairy producers are the weaker party in the relationship may consider the buyers as incompetent. This outcome is consistent with other research findings such

as by Heide and John (1992) which state that the use of power in the inter-organisational relationships reduces the level of trust.

Price satisfaction, defined as the perception of achieving a satisfied and reasonable price from the buyers, is found to influence contractual trust. This indicates that dairy farmers trust honest and reliable buyers who are able to keep their promises in terms of milk prices and mode of payment. Contrary to our expectations, price satisfaction does not influence competence trust. This may be due to the fact that dairy farmers understand and acknowledge that their milk prices are based on grading and quality. Since the process of milk grading is transparent and understandable to the farmers, any changes in milk grading will not influence their trust in the buyers.

In summary, the study reveals that both competence-goodwill and contractual trusts have the potency to influence suppliers loyalty, and that dairy farmers perception of trust for their buyers can be improved through timely communication, reasonable price and accepted cultural and business practices.

Conclusion and Summary

This study contributes empirically and theoretically to the supplier relationship management literature in agribusiness. From an empirical perspective, the paper identifies how Malaysian milk buyers can build a loyal base with their suppliers as a means to secure uninterrupted milk supplies. One of the major recommendations is that milk buyers are encouraged to use collaborative communication with their suppliers by having frequent communication, proper feedback and adequate information sharing with their supplier which encourages problem solving and avoids misunderstandings in their relationships. In this research, we further expand the role of collaborative communication that influences trust as other scholars found that collaborative communication improves buyer-seller relationships (Mohr & Nevin, 1990) and supplier performance (Prahinski & Benton, 2004).

The paper provides a conceptual model of supplier loyalty particularly in business-to-business relationships in agribusinesses. In other industries such as service industries, customer loyalty has been widely explored (Bennett & Rundle-Thiele, 2002; Chaudhuri & Holbrook, 2001; Jacoby & Chestnut, 1978; Rauyruen & Miller, 2007). Scholars in these industries posit that customers trust will initially lead to customer loyalty (Chaudhuri & Holbrook, 2001; Rauyruen & Miller, 2007), while in this research we confirm this finding through a different perspective. We redefine business customers as suppliers and discuss the consequences and implications of having a loyal supplier in the agricultural industry.

This research is not without its limitations. First, a cross-sectional study is limited in its ability to study a concept, such as long-term relationships which involve multiple actors over time. In other words, the attitudes of producers toward relationships change with time (Jarratt & O'Neill, 2002) so capturing time series data would provide a better insight into this aspect of relationship building.

Finally, our data is also based on the single-sided interviews with the dairy producers, and therefore, potentially subject to hindsight and other biases. A study between producers and buyers should be conducted to capture a better insight and research framework.

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Appendix 1

Table 1: Questionnaires descriptive analyses

Price Satisfaction	Mean	Std. Deviation
I agree with the grading system	3.69	1.046
I get a reasonable price-quality ratio	3.73	.827
The buyers offer me fair and reasonable milk price	3.71	.952
Culture Similarity		
We (producer and buyer) share the same work culture	3.95	.576
My buyer respects my belief and traditions	4.07	.654
When I have problem, my buyer will make sure the problem does not jeopardize our contract relationship	3.68	.732
Power Dependency		
I have no alternative buyer	3.23	1.451
My buyer controls all the production information	3.14	1.079
I cannot find other buyer to buy my milk yield	3.14	1.393
Collaborative Communication		
My buyer keeps me informed regularly	3.89	.677
Both of us frequently discuss each other's expectations	3.71	.803
We share information regularly with one another	3.88	.817
Contractual trust	Mean	Std. Deviation
My buyer is quick to handle my complaints	3.98	.826
My buyers promises are reliable	4.09	.743
I can trust my buyer	4.15	.933
Competency -goodwill trust	Mean	Std. Deviation
My buyer cares for my welfare	3.89	.893
My buyer has a high technical expertise that can improve my milk yield	3.98	.793
My buyer knows which type of cow breed suits my dairy business	3.88	.905
I receive veterinary services and consultation regularly	4.18	.986
Loyalty	Mean	Std. Deviation
I will ask other dairy producers to seek assistance from my buyer	3.82	1.151
I am loyal to my buyer	4.43	.793
My current buyer is much more convenient than other buyers	4.06	1.058

Appendix 2 Table 2: Principal Component Analysis Results

Factors and Item KMO = .775, Explained variance= 63.160	Factor Loadings
Contractual Trust : Cronbachs alpha = .757	
My buyer is quick to handle my complaints	.825
I can trust my buyer	.815
My buyers promises are reliable	.759
Competency and goodwill Trust : Cronbachs alpha = .748	
My buyer cares for my welfare	.810
My buyer knows which type of cow breed suits my dairy business	.767
I receive veterinary services and consultation regularly	.723
My buyer has a high technical expertise that can improve my milk yield	.676
Loyalty **KMO = .677, Cronbachs alpha = .712**	Factor Loadings
I will ask other dairy producers to seek assistance from my buyer	.775
I am loyal to my buyer	.814
My current buyer is much more convenient than other buyers	.825
Collaborative Communication **KMO = .661, Cronbachs alpha = .786**	Factor Loadings
Both of us frequently discuss each other's expectations	.883
We share information regularly with one another	.870
My buyer keep me informed regularly	.751
Power Dependency **KMO = .575, Cronbachs alpha = .731**	Factor Loadings
I have no alternative of buyer	.901
I can always find other buyer to buy my milk yield	.898
My buyer controls all the production information	.682
Culture Similarity **KMO = .577, Cronbachs alpha = .672**	Factor Loadings
We (producer and buyer) share the same work culture	.882
My buyer respects my believes and traditions	.798
When I have problem, my buyer will make sure the problem does not jeopardize our contract relationship	.672
Price Satisfaction **KMO = .715, Cronbachs alpha = .821**	Factor Loadings
I get a reasonable price-quality ratio	.881
The buyers offer me fair and reasonable milk price	.870
I agree with the grading system	.838