Buyer and Seller Relationships in Malaysia's Dairy Industry

by

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Dedication

This thesis is dedicated to my family: To my wife, Doreen who has been continually supportive and who has encouraged me throughout my years of study and to my children: Dawson, Daniel and Bridget, who have given me the inspiration to write and to finish this thesis.

Acknowledgement

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Declaration:

I, Bonaventure Boniface, hereby declare that this thesis contains no material which has been accepted for the award of any other degree in any university or other tertiary institution. This work contains no material previously published or written by another person, except where due reference has been made in the text and is completely written by me.

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List of publications:

a) Bonaventure Boniface, Amos Gyau, Randy Stringer and Wendy Umberger. (2010). Building producer loyalty in Malaysia's fresh milk supply chain, Australasian Agribusiness Review, Vol 18, 5, pp. 66-84.
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Abstract:

This thesis examines buyer and seller relationships between dairy producers and milk buyers in Malaysia. The study investigates the determinants of long-term relationships. While relationship marketing has received considerable attention in many other industry sectors, few studies have addressed the food industry. The existing agri-food studies emphasize long-term relationships, investigating variables such as trust, relationship quality and guanxi networks.

This thesis addresses how buyers and sellers interact and what influences them to engage in longer-term relationships to improve their business performance. The specific research objectives are to investigate: (i) the determinants of relationship quality and its influence towards long-term relationships; (ii) the determinants of trust and its influence towards supplier loyalty; (iii) the influence of price satisfaction dimensions towards loyalty and business performance; (iv) segmentation of producer perceptions of the relationships; and (v) consumers' preferences and consumption of dairy products.

The study develops and tests a long-term relationship measure of loyalty and relationship commitment. The thesis identifies commitment and loyalty as the essential measures of long-term relationships. Data was collected from 133 dairy producers through face-to-face interviews in Malaysia in June and July 2009. The random sample of producers came from the Department of Veterinary Services database. The data are representative of dairy farm operations throughout Malaysia, providing representative examples of the marketing channels, contracting methods and memorandum of understanding used between producers and buyers. The various scales of operation in Malaysia are also represented.

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List of Acronyms

AVE	Average Variance Extracted
B2B	Business-to-Business
B2C	Business-to-Customer
CF	Contract Farming
CFI	Comparative Fit Index
DPS	Dairy Project Scheme
DVS	Department of Veterinary Services
ECR	Efficient Consumer Response
FDI	Foreign Direct Investment
FFV	Fresh Fruit Vegetables
JIT	Just In Time
KMO-MSA	Kaiser-Meyer-Olkin Measure of Sampling
LTR	Long-Term Relationships
MBRT	Methylene Blue dye Reduction test
MCC	Milk Collecting Centre
MDG	Market Driven Group
MYR	Malaysian Ringgit
PCA	Principal Component Analysis
PGFI	Parsimony Goodness Of Fit Index
PLS	Partial Least Squares
QR	Quick Response
RM	Relationship Marketing

RMSEA	Root Mean Square Error of Approximation Index
RG	Relationship Group
RQ	Relationship Quality
SEM	Structural Equation Modelling
SCM	Supply Chain Management
STATA	Data Analysis and Statistical Software
TLI	Tucker-Lewis Index
TPC	Total Plate Count
UHT	Ultra High Temperature
USD	United States Dollar

CHAPTER 1: Overview of the Study

This chapter provides a brief introduction to Malaysia's dairy industry and its evolving challenges due to increasing fluid milk consumption in the country. The research problem and objectives will be outlined showing a focus on the buyer and seller relationships while the significance of the study, conceptual framework and an outline of the thesis structure will be presented at the end of the chapter.

1.1 Introduction

Malaysia's agri-food industries continue to undergo rapid and fundamental structural changes in response to changes in the economic situation of consumers. Technology including the internet, modern transportation, media and sophisticated communication devices create "new consumers" who demand high quality, healthy and differentiated food produce at reasonable prices (Arshad, Mohamed & Latiff, 2006). Increased concentration on processing, trading, marketing, and retailing is being observed in all regions of the country and in all segments of the production-distribution chains. The traditional ways of producing food are being replaced by practices more related to consumers' needs, thereby necessitating a need for greater coordination between respondents, processors, wholesalers, retailers, and others in the supply chain.

Generally, Malaysian consumers are known to be cautious and aware of food quality, safety, and income trends, which leads to more affluent consumers demanding convenience foods that are healthy and nutritious. In fact, there has been a significant increase in per person consumption of cereals and milk from 160.3 kilograms and 32.9 kilograms, respectively, in 1990 to 171.6 kilograms and 43.5 kilograms in 2005 (FAO, 2007). In contrast, rice consumption declined by around 15% over the same period (Warr, Rodriguez & Penm, 2008). The shift in food consumption towards dairy products indicates growing health awareness among Malaysians and the trends are expected to continue throughout the next decade (Dong, 2006). Inevitably, altering food consumption and increasing imports have significantly changed the structure of Malaysia's dairy industry.

Malaysia's dairy market is projected to expand rapidly, and by 2014 dairy product consumption is expected to increase by more than 30% (Dong, 2006). Fluid milk consumption per capita was estimated at around 47.5 kilograms in 2010, which contributed

to domestic milk consumption of 1,373 million litres, while the domestic milk production was around 67 million litres (Department of Veterinary Services, Malaysia, 2011). The value of dairy product imports increased from Malaysian Ringgit (MYR) 1,687 (USD$ 540.96) million in 2006 to MYR 2,027 (USD$ 649.98) million in 2010 (Department of Statistics, Malaysia, 2011).

Malaysia's dairy industry faces daunting challenges. The Malaysian Government has continually provided numerous forms of assistance to promote milk production, such as the establishment of the Milk Collecting Centre (MCC), milk subsidies, adequate veterinary services and milk marketing support. However, the domestic dairy industry is barely keeping pace with its share of the demand expansion. There is an increasing number of milk buyers, processors, agents, restaurants, and direct consumers but a small number of producers, thus creating constant competition in the market.

The dairy producers are seeking a better understanding of how they might compete in order to take better advantage of a profitable and expanding market, while the milk buyers seek information on how they can build stronger and mutually beneficial relationships with their suppliers to secure regular and uninterrupted milk supplies (Boniface, Gyau, Stringer & Umberger, 2010). One of the ways to overcome this problem is to understand the needs of the suppliers, their wants and preferences (Ramsay & Wagner, 2009).

A growing body of agri-food literature suggests that efforts to build and maintain buyer-seller relationships can provide benefits to the producers and buyers. For example, Fischer and Hartmann (2010) argue that in competitive food markets, having close and personal relationships with exchange partners encourages collaboration. Similarly, relationship marketing literature suggests wide-ranging benefits from enhancing relationship attributes, including lower transaction costs, enhanced efficiencies, joint decision-making, better information sharing and joint investments (Anderson & Narus, 1990; Hunt & Lambe, 2000; Batt, 2003; Lu, Trienekens & Omta, 2008; Gyau & Spiller, 2010).

This research is about understanding how relationship marketing could strengthen and promote buyer and seller collaboration in an emerging economy focusing on a thesis that investigates relationship variables such as trust, loyalty and commitment between exchange partners in the agri-food supply chain. Although relationship marketing has

received considerable attention in many industries such as the services, banking and manufacturing industries, it has not been thoroughly explored in agricultural and food supply chains (Fischer & Hartmann, 2010).

Relationship marketing research in the food industry is relatively recent (Batt, 2003; Gyau & Spiller, 2007; Lu, Feng, Trienekens & Omta, 2008) with most of the studies emphasizing long-term relationships and investigating variables such as trust (Batt, 2003), relationship quality (Gyau & Spiller, 2010) and guanxi networks (Lu et al., 2008). The outcome of these studies may differ from those of this study, for as Palmer (1997) argues, relationship marketing means different things in different cultures.

1.2 Background of the research

The establishment of Malaysia's dairy industry was initiated by the government and motivated by the objectives of helping small scale producers cope with increasing milk demand and improving rural development. In the early years of establishment, Malaysia's dairy industry faced many constraints especially in farm production and husbandry. These constraints related to milk quality problems (Chye, Abdullah, & Ayob, 2004), high input costs (Wells, 1981), unsuitable dairy cows for tropical weather with low milk yields (Boniface, Silip & Ahmad, 2007; Murugaiyah, Ramakrishnan, Sheikh Omar, Knight, & Wilde, 2001) and inefficient farm management (Pharo, et al., 1990). Therefore, for many years, Malaysia's dairy industry has been emphasizing research on farm production and husbandry. For example, Wells (1981) investigated the impact of milk subsidies on dairy development and found that the industry was heavily subsidised. Wan Hassan, Phipps, & Owen (1989) suggested integrated farming to reduce production costs.

Other studies emphasized technology transfer such as computerised recording systems (Pharo, et al., 1990), while others focused on milk quality (Chye, Abdullah, & Ayob, 2004) and milk production (Murugaiyah, Ramakrishnan, Sheikh Omar, Knight, & Wilde, 2001). As a result of extensive research on husbandry management and breeding technology, local producers are now able to produce better quality milk and a considerably larger yield. However, with higher milk demand, the local dairy industry is only keeping pace with its overall market share, around 5% (Boniface et al., 2010).

Milk marketing in Malaysia is dominated by a state-owned enterprise, the Milk Collecting Centre (MCC), under the supervision of the Department of Veterinary Services. The government provides centralised milk collection and distribution facilities, some rural credit, milk subsidies, as well as around 10 dairy cows for start up and extension-service support for animal nutrition and hygiene. Producers sell their milk to the MCC at a predetermined price, which is based on a grading system, however, this contract does not restrict the producers from selling their milk to other buyers so consequently, there are multiple markets for the producers.

Some producers sell their milk to private traders and others sell directly to restaurants or processing firms, including Dutch Lady Milk Industries Berhad, Susu Lembu Asli and Sabah International Dairies (Boniface et al., 2010). There are wide differences in the prices received by farmers depending on to whom they sell. For instance, whereas the farm gate price that the farmers receive from the MCC and factories ranges from MYR 1.80 to MYR 2.50 per litre based on milk quality, the price range for individuals, agents and restaurants lies between MYR 2.20 to MYR 4.00 based on market demand. The multiple markets and price differences create constant competition among milk buyers. A competitive market encourages effective supply chain management by promoting closer and long-term working relationships between partners (Spekman et al., 1998).

The strength of supply chain management lies in the value-adding potential at each level such as promoting long-term relationships between exchange partners, which may encourage sustainable business exchanges (Spekman et al., 1998; Fischer and Hartman, 2010). Malaysia's dairy supply chain consists of consumers, milk buyers (including the MCC) and producers. The main motivation for the local milk supply to evolve is the consumer, and in order to keep abreast of the increasing consumer demand, both milk buyers and producers need to work together. Long-term relationships between both parties are essential (Batt, 2003; Lu et al., 2008); milk buyers are competing against each other to secure constant milk supplies as a result of the limited number of dairy producers and the escalating demand for fresh milk. Therefore, having loyal producers is crucial.

The dairy producers, however, are predominantly small-scale operations with just a few that are large scale. The varieties in farm size relate to different kinds of producers' skills and attributes. Most of the producers have been in the business for more than 10 years, and

have substantial expertise and solid husbandry skills, including modern breeding technology for improving milk quality. Other producers are well established in developing their own feed supplies to increase milk yields. Considering the expertise, knowledge and investment in these businesses, the establishing and maintaining of trusted buyers becomes crucial for producers.

However, there is limited understanding of how milk buyers and milk producers interact in the markets in Malaysia and of what motivates producers to stay in a relationship. What factors may encourage long-term relationships? In the presence of market prices, could price satisfaction play a significant role in enhancing buyer and seller relationships? Could the varieties in farm size and skills influence buyer-seller relationships? These questions bring us to the research objectives.

1.3 Research Objectives

This thesis focuses on the role of relationship marketing (RM) between buyers and sellers in Malaysia's dairy industry. The author is interested in how the two exchange partners interact and what influences them towards establishing long-term relationships in order to improve their business performance.

The specific research objectives were to investigate:

a) the determinants of relationship quality and its influence on long-term relationships;
b) the determinants of trust and its influence on supplier loyalty;
c) the influence of price satisfaction dimensions on loyalty and business performance;
d) segmentation of producer perceptions of the relationships; and
e) consumers' preferences and consumption of dairy products.

The understanding of consumers' preferences and consumption is crucial as a motivating force for the continuation and development of the Malaysian dairy industry. It is intended, that, apart from strengthening the bond between exchange partners in coping with an emerging economy, milk buyers and producers might have some insight into the dairy consumers' consumption patterns and preferences. This will then have a motivating effect

on industry growth or decline. The outcomes of the study may also facilitate government policy formulation and future direction planning.

1.4 The Conceptual Framework

To aid in better understanding of the discussion in each chapter, a general conceptual framework is presented which derives from the inter-firm literature and focuses on the buyer-seller relationship (see Figure 1.1).

Relationship marketing (RM) has been consistently viewed as an effective strategy in promoting interaction between the buyer and the seller (Hunt & Lambe, 2000). The main goal of RM is to create and maintain lasting relationships between exchange partners that provide mutual benefits to both sides (Rapp & Collins, 1991). Promoting long-term relationships provides many benefits between exchange partners, for example, in the market place it reduces transaction costs, encourages collaboration and avoids switching behaviour of the suppliers (Hobbs 2001; Hunt & Lambe, 2000; Venetis & Ghauri, 2004).

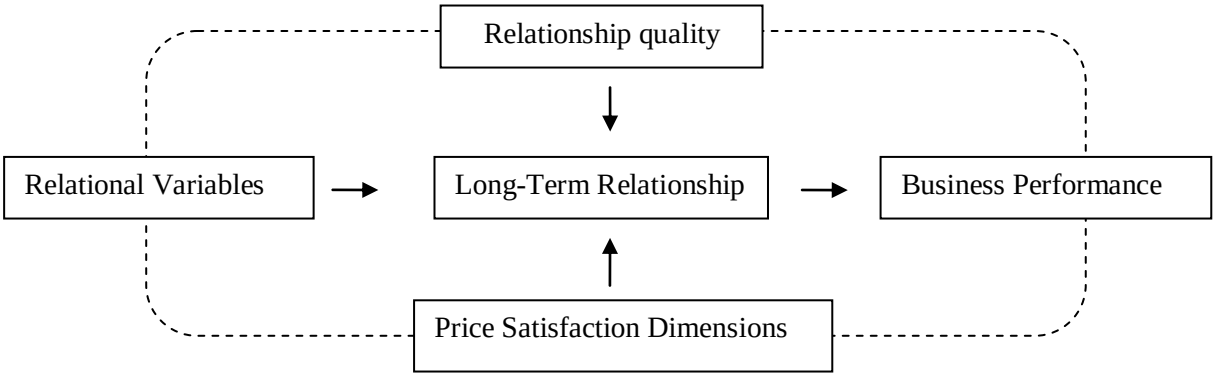
For this study, a long-term relationship measure of loyalty and relationship commitment is developed. Since both relationship commitment and loyalty are not built overnight, it can be considered as a suitable gauge reflecting the ongoing process of the relationship (Anderson & Narus, 1990; Ford, 1980; Morgan & Hunt, 1994). The development of the measure also relies on the quality of the relationship between partners which derives from relational variables such as goal attainment, constant communication, joint action, flexibility, power distance, and mutuality (Gyau & Spiller, 2010; Ivens, 2004; Mohr, Fisher, & Nevin, 1996).

Relationship quality can be defined as the producers' perception of how well their relationships fulfil the expectations, predictions, goals and desires of the customer (Schulze, Wocken & Spiller, 2006; Gyau & Spiller, 2010), and can be considered as an appropriate indicator of a successful relationship (Hennig-Thurau & Hansen, 2000). Relationship quality is manifested in several distinct but related constructs and, as a result, there seems to be no consensus among researchers on the set of constructs or variables which constitute relationship quality, or what its antecedents are (Crosby, 1990). Because of this, different researchers have used different variables to measure the relationship quality construct (Crosby et al. 1990; Gyau & Spiller, 2010).

Many research studies indicate that relationship quality may enhance business-to-business relationships. For instance, Crosby et al., (1990) explain that relationship quality in the service industry is essential in fostering sales effectiveness and sustainability. Rauyruen and Miller (2007) added to this and showed that the presence of relationship quality in the courier delivery service industry eventually influenced partner loyalty. Based on this premise, having relationship quality with exchange partners can influence and promote long-term relationships as well as business performance.

O'Toole and Donaldson (2000) further argue that performance can be seen as both financial and non-financial. They conceptualized financial performance as closely related to economic rewards such as return on investment, cost sharing and long-term profitability, while non-financial performance is the outcome of mutual interest, trust and satisfaction in relationships. This research considers business performance as an integration of both the financial and non-financial.

Figure 1.1: Conceptual model for buyer-seller relationships in Malaysia's dairy industry



In many ways, interaction between firms starts with economic motivation such as price in that buyers who offer a reasonable price will attract sellers. However, price asymmetry in the market may increase switching behaviour as sellers continually look for better and more reliable prices. This is an important element, consequently, the nature of price satisfaction and its dimensions in gaining supplier loyalty is investigated in this research.

Price satisfaction refers to the psychological result of a difference between price expectations and price perceptions (Matzler et al., 2007). In any market exchange

relationship, price is a dominant factor. Maztler et al., (2007, p.217) state that 'the central role of price as a purchasing determinant as well as in post-purchasing processes is well recognized'. However, understanding price satisfaction as a multi-dimensional construct provides a better understanding of the customers' satisfaction with price (Matzler et al., 2007). Geyskens et al., (1999) find that satisfaction can be achieved through economic and non-economic factors, because offering a better and more reasonable price fulfils the economic reward, while feelings of being appreciated and perceived fairness complete the non-economic satisfaction (Geyskens et al., 1999).

1.5 The Significance of the Study

This research will propose three structural equation models, followed by a cluster analysis to provide a comprehensive description of the buyer-seller relationship in the Malaysian dairy industry. Each chapter will address the research objectives to measure and evaluate relational perceptions of the dairy producers toward their buyers. Model one investigates the determinants of relationship quality and its influence on long-term relationships. Model two scrutinizes the suppliers' trust in the milk buyers and how it influences suppliers' loyalty; and model three focuses on the multi-dimensions of price satisfaction in the industry. The cluster analysis provides a comprehensive analysis of the producers' relationship segmentation based on their loyalty, trust and price satisfaction. The logit regression model is a confirmation of Malaysian consumers' preferences and factors in purchasing dairy products.

The outcome from this research will offer milk buyers comprehensive guidelines for determining the best approach in building achievable and workable relationships with dairy producers. Chapter 7 further clarifies the future of the industry and the best practice marketing strategies based on consumers' preferences and factors influencing them to buy dairy products such as fluid milk, powdered milk and ice-cream. Furthermore, the study will contribute to the current knowledge of buyer-seller relationships through an examination of the multi-dimensions of price satisfaction and its influence on suppliers' loyalty. It further shows the importance of having a prominent and quality relationship in the emerging economy.

To gain a better understanding of the whole research, a conceptual model was developed as presented in Figure 1.1. The model is a summary of different models presented and discussed separately in each of the chapters. In the next section, the structure of the thesis is presented.

1.5 Structure of the Thesis

Chapter 1 – Overview of the Study

Topics covered in this chapter comprise the background of the research, the research objectives and the general conceptual model.

Chapter 2 – Literature Review

Chapter 2 discusses the evolution of relationship marketing in buyer and seller interaction. The importance of relationships/networking between exchange partners in the agricultural industry is also presented.

Chapter 3 – Developing Long-Term Relationships in Malaysia's Dairy Industry

Chapter 3 discusses the importance of building long-term relationships in the Malaysian dairy industry by investigating those elements that determine quality and examining how these influence the stability and duration of such. A conceptual model is developed to represent this.

Chapter 4 – Building Producer Loyalty in Malaysia's Fresh Milk Supply Chain

A conceptual model of producer trust and its influence on producer loyalty is presented. This chapter discusses the importance of understanding producers' wants, needs and preferences. It further elaborates producer loyalty as the mirror reflection of customer loyalty.

Chapter 5 – Linking Price Satisfaction and Business Performance in Malaysia's Dairy Industry

Chapter 5 presents the dimensions of price satisfaction and its influence on loyalty and business performance. This chapter elaborates the dimensions of price satisfaction, namely price-quality ratio, price fairness, price reliability, price transparency and relative price.

Chapter 6 – Producer Segmentation and Long-Term Relationships in Malaysia's Fresh Milk Supply Chain

In this chapter, the author argues that producers are actually not homogenous but rather heterogeneous. Therefore, by using cluster analysis, two well defined groups are identified, each differing in their perception of relationships with their buyers, as well as their demographic characteristics.

Chapter 7 – Factors Influencing Malaysian Consumers' Consumption of Dairy Products

Given the background of Malaysia's dairy industry, and in order to fully understand how a domestic industry can most efficiently meet consumer demand, this chapter investigates what factors influence consumer consumption and their preference for dairy products. This chapter provides essential information on consumer behaviour and its significance for the development of Malaysia's dairy industry.

Chapter 8 – Discussion and Implications

In this chapter, the findings of the study are discussed and the managerial implications are explored along with suggestions for further research and a discussion of the research limitations of this study.

CHAPTER 2: Relationship marketing and the agri-food supply chain

This chapter is an overview of the literature dealing with relationship marketing (RM) and first presents a discussion of the theoretical approaches to relationship marketing followed by its history and development. In addition this chapter looks at relationship marketing from the perspective of the buyer and seller relationship in agricultural industry and its significance to Malaysia's dairy industry. The chapter concludes with a discussion of some methodological approaches which have been used in relationship marketing.

2.1 Introduction

The structure of food supply chains has been driven by the unprecedented development of modern transportation, advanced technology and communications, as well as changing and increased food demands (Fischer & Hartman, 2010). These changes create competition and promote collaboration among actors in the supply chain.

Trienekens et al. (2003) state that there are four dimensions in food supply chain analysis: (1) the business economics dimension which relates to efficiency (in-cost benefit perspective) and to consumer orientation; (2) the environmental dimension, which concerns the way production, trade and distribution of food are embedded in the ecological (environmental) outcome; (3) the technological dimension, which is about the way technology (product and process technology, information and communication technology) can be applied to improve production and distribution of quality and safe food products; and (4) the social and legal dimension, which relates to relational norms and issues like human wellbeing, animal welfare and sustainable socio-economic development.

The main focus of this study is the socio-economic dimension of the supply chain, specifically how relationships influence buyers and sellers in Malaysia's dairy industry. Webster (1992) indicates that there has been a shift from a transaction to a relationship focus and stresses that, "the focus shifts from products and firms as units of analysis to people, organizations, and the social processes that bind actors together in ongoing relationships" (Webster, 1992, p.10). The role of relationships is important for highly perishable commodities like milk. Other studies suggest wide-ranging outcomes and benefits from relationship marketing (RM), including lower transaction costs, enhanced efficiencies, joint decision-making, better information sharing and joint investments (Batt,

2003; Lu et al., 2008). Therefore, it is essential to understand the buyer-seller relationship especially in the agricultural setting.

2.2 Theoretical Approaches to the Buyer-Seller Relationship

There are several theoretical approaches that clearly relate to the development of buyer and seller relationships. Some may contribute directly to understanding the relationships, and some may be seen in isolation but are still significant. In this section, four interrelated theories are discussed: (i) transaction cost approach; (ii) principal-agency theory; (iii) resource dependence theory; and (iv) resource advantage theory.

2.2.1 Transaction cost approach

In the traditional microeconomic paradigm, the firm is involved in the market transaction in order to secure resources such as labor capital, raw materials and provision inputs. Each transaction is essentially dependent on all other transactions, guided solely by the price mechanism of the free, competitive market as the firm seeks to buy at the lowest available price. Williamson (1985) believes that markets may be considered to operate inefficiently in certain instances, due to human and environmental factors. When the market is characterized by complexity and uncertainty, then the bounded rationality of man makes it very costly to design and negotiate viable contracts.

According to Webster (1992), normally the transaction occurs in a one-time exchange of value between two parties with no prior or subsequent interaction which he calls a "pure transaction". In the pure transaction, "there is no brand name, no recognition of the customer by the seller, no credit extension, no preference" (Webster, 1992). In other words, it is a traditional view of the transaction cost. In the context of developing and building relationships there are other costs associated with the transaction itself such as the costs of searching, of negotiating and contracting, and of monitoring supplier performance.

These costs arise for ex ante reasons (drafting, negotiating, and safeguarding agreements between the parties to a transaction) and ex post reasons (maladaptation, haggling, establishment, operational, and bonding costs (Williamson, 1985). Williamson (1985) also argues that there are two human and three environmental factors that lead to transaction costs arising.

The two human factors are:

1. Bounded rationality: Humans are unlikely to have the abilities or resources to consider every state-contingent outcome associated with any transaction that might arise.
2. Opportunism: Humans will act to further their own self-interests.

The three environmental factors are:

1. Uncertainty: This exacerbates the problems that arise because of bounded rationality and opportunism.
2. Small numbers trading: If only a small number of players exist in a market place, a party to a transaction may have difficulty disciplining the other parties in the transaction via the possibility of withdrawal and use of alternative players in the market place.
3. Asset specificity: The value of an asset may be attached to a particular transaction that it supports. The party who has invested in the asset will incur a loss if the party that has not invested withdraws from the transaction. The possibility (threat) of this party acting opportunistically leads to the so-called "hold-up" problem.

Within the buyer-seller relationship, frequent purchase of raw materials such as agricultural input and products goes beyond the norm of pure transaction. Repeated purchases encourage constant interaction and communication between exchange partners. Over time, both parties start to develop trust and promote loyalty which is the foundation of a relationship and the buyers should find it easy to interact and buy from the same suppliers, thus minimizing the effort needed to obtain and process information from different suppliers. Therefore, this reduces the cost of searching and negotiation. In other words, relationships make transactions more cost efficient (Webster, 1992).

Thus in the agricultural industry, one of the many ways to reduce transaction costs is through vertical integration whereby the buyer and the supplier (seller) engage in a mutual collaboration through contractual activities. Williamson (1985) argues that in order to minimize costs and obtain economic efficiency, firms should practise the strategy of vertical integration. However, in being integrated with other firms, moral hazards such as lack of trust and self-interest may occur. Williamson further explains in a later article that "transaction cost economics aspires to describe 'man as he is' in cognitive and self-interestedness respects" (Williamson, 1991, p.79).

2.2.2 Principal-agency theory

The next theoretical approach to the area of buyer-seller relationships is the principal-agency theory which makes two assumptions: (1) that goal conflicts exist between the principals and agents; and (2) that agents have more information than their principals (Waterman, & Meier, 1998; Grossman, & Hart, 1986). According to the principal-agent paradigm, the principal recognizes the adaptive nature of the agent's decision-making process, and will take advantage of this knowledge by choosing contractual terms which will "provide an incentive for the agent to choose an input, from the set of feasible inputs, so as to maximize the agent's expected utility while simultaneously providing the highest possible expected utility for the principal" (Mirman, 1974: 238). Transaction costs and information asymmetry are central to principal-agency theory which initially searches for the best option, that both partners be interdependent thus minimizing the sum of the costs involved (Hobbs, 2001). However, interdependence between firms may cause other problems such as power asymmetry. This links us to the next theory.

2.2.3 Resource dependence theory

Resource dependence theory views inter-firm governance as an ideal strategy to respond to the conditions of uncertainty and dependence (Pfeffer & Salancik, 1978). The premise of this theory is that firms will seek to reduce uncertainty and manage dependence by means of establishing formal or semiformal links with other firms (Heide, 1994). This however, may create power asymmetry when the exchange partner is much more powerful than the other. In a contractual relationship, the contractor usually is the one who has more power while the contractee is the one who has to depend on the contractor (Singh, 2002). Thus, some scholars argue that related norms such as trust may help to create a more balanced arrangement with regards to power (Heide & John, 1992).

2.2.4 Resource advantage theory

Resource advantage theory derives from heterogeneous demand theory and resource based theory of the firm (Hunt & Lambe, 2000). According to this theory, competition is a process for any firms to secure a position in a market place. The way to achieve this is by acquiring competitive advantage. Hunt et al. (2006, p.76) further explain that "once a firm's comparative advantage in resources enables it to achieve superior performance through a position of competitive advantages in some market segment(s), competitors attempt to neutralize and/or leapfrog the advantage of the firm through acquisition,

imitation, substitution, or major innovation". Therefore, firms enter into relational exchanges when such relationships contribute to the competitiveness of firms (Hunt et al., 2006; Hunt, & Lambe, 2000).

In many cases, scholars have proposed other theories which contribute to and motivate research on the buyer-seller relationship. The theories presented here are only some of the many theories which have evolved in the marketing literature and which are considered to be the most relevant for this dissertation.

2.3 Relationship Marketing Evolution

The development of marketing research over the years has been dynamic and varied. Kotler (1972, p. 46) stated that "marketing emerged each time with a refreshed and expanded self-concept". After 39 years, the statement remains significant. In recent years, marketing has evolved from marketing mix to relationship marketing (Grönroos, 1994).

The concept of relationship marketing was first introduced by Berry in 1983 (Grönroos, 1994; Berry, 1995), and since then the concept has been used widely and consistently in the marketing literature. Scholars in various industries have continued to conduct research to understand the nature and consequences of relationship marketing in their respective industries. Important research questions such as the what, who, how, when, and why in relation to this concept are an interesting field to explore.

2.3.1 What is relationship marketing (RM)?

Due to its popularity over the past 10 years, many scholars have attempted to define relationship marketing based on their research interest and on what has been happening in the industry. For instance, Berry (1983, p.25) defined relationship marketing as "attracting, maintaining, and in multi-service organizations - enhancing customer relationships". Jackson (1985, p.2) refers to RM as "marketing oriented toward strong, lasting relationships with individual accounts". Berry and Parasuraman (1991) propose that RM concerns attracting, developing, and retaining customer relationships. These definitions are primarily focused on seller relationships with their buyers (customers), which cover only half of the supply chain relationships.

Another perspective of RM was introduced by Morgan and Hunt (1994), which embraces all the supply chain actors such as suppliers, buyers and sellers in industrial marketing. They state that "RM refers to all marketing activities directed at establishing, developing, and maintaining successful relational exchanges" (Morgan, & Hunt, 1994, p. 22). This definition is supported by Sheth and Parvatiyar (1995), who view relationship marketing as attempts to involve and integrate customers, suppliers, and other infrastructural partners into a firm's developmental and marketing strategies. Although most definitions have similar denominators, they actually cover different scopes.

However, there is one definition which can be regarded as a comprehensive definition and is discussed in detail by Grönroos (1996). Grönroos (1991, p.8) defines RM as follows: "Relationship marketing is to establish, maintain, and enhance relationships with customers and other partners, at a profit, so that the objectives of the parties involved are met. This is achieved by a mutual exchange and fulfilment of promises". In this definition, Grönroos emphasizes the mutual benefits and keeping of promises between exchange partners. Thus, RM can be used as a strategy in which the management of interactions, relationships and networks is the fundamental issue (Gummesson, 1994). The main goal of RM is to create and maintain lasting relationships between exchange partners that provide mutual benefits to both sides (Rapp, & Collins, 1991). It is, therefore, essential to understand who are the main actors involved in these relationships.

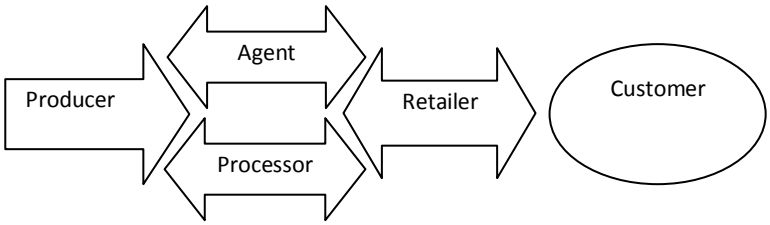
2.3.2 Who are the main actors and how do they interact?

Based on Grönroos' (1991) definition, RM covers all forms of relational exchanges and does not limit itself to one way communication but uses two way communication (Dwyer, Schurr, & Oh, 1987). As shown in Figure 2.1, the interaction of many actors in the supply chain is covered in the relationship marketing terminology. The interactions between actors are dynamic and interchangeable. The seller may be a buyer at the same time in a reciprocal setting (Grönroos, 1994). For instance, in the dairy industry, a milk buyer purchases milk from dairy producers, and in other exchanges, a milk buyer, such as an agent or processor sells it to the distributor. The distributor then changes their role from milk buyer to become a milk seller to the customer. The interchanging roles in the supply chain are determined by the nature of the transaction.

In relationship marketing, the interaction between buyer and seller has been widely investigated by scholars. It can be distinguished by looking at two main relationships: business-to-customer (B2C) relationships; and business-to-business relationships (B2B). The B2C relationship looks at the interaction between customers and firms, while the B2B relationship looks at the interaction between firms. Both are present in one supply chain but with different perspectives and objectives.

The B2C interaction mainly focuses on understanding customer behaviour and characteristics such as how to attract loyal customers by capturing customers' satisfaction and trust (Diller, 2000), while the B2B relationship looks at how to build successful and workable partnerships such as achieving mutual benefits and joint actions (Morgan, & Hunt, 1994; Spekman, 1988).

Figure 2.1: Supply chain relationship



Therefore, in any supply chain, it is essential to acknowledge the actors and their roles in the transactions and relationships. The actors in the supply chain may vary based on the industry. For the agriculture industry, it may start with the farmer/producers or with the processors (as contractors who provide provisional input to farmers) and end up with consumers (Eaton & Sherpherd, 2001). The number of players in the supply chain also depends on the complexity and length of the chain. It has also been noted that supply chain management in developed and developing countries can be distinguished and varies accordingly. This also applies in the case of relationship marketing. Palmer (1997) indicates that relationship marketing means different things in different cultures. This raises another question, when and how does RM evolve?

2.3.3 When and how does relationship marketing evolve?

Relationship marketing is a new-old concept (Berry, 1995). It was practised centuries ago; Grönroos (1994, p.18) cites the Middle Eastern proverb: "As a merchant, you'd better have friends in every town". It was part of many cultures and traditions to form good

relationships with each other. In those times, most farmers sold their produce directly in traditional markets and had a face-to-face encounter with their customers. Sheth and Parvatiyar (1995) argue that a relationship orientation in marketing was evident during the pre-industrial era. Direct interaction between producers and consumers inevitably promoted cooperation, reliance, and trust among marketing actors.

However, as populations grew and modernization took place through industrial eras, the face-to face encounter with customers changed to multiple interactions. The supply chain became much more dynamic and complex and involved many players such as producers, traders, manufacturers, retailers and customers. An immense number of transactions occurred and many firms suffered during the industrial eras due to practices of competitive bidding (Sheth & Parvatiyar, 1995).

Sheth and Parvatiyar (1995) explain that many firms were not keen on discrete transactions and began to develop longer-term contracts between exchange partners. Some engaged in long-term partnerships and formed alliances with other companies. For example, a partnering type of relationship between Whirlpool and Sears, and between McDonalds and Coca-Cola has existed for more than 50 years.

Similarly, Mitsubishi Electric and Westinghouse Electric have been engaged in an alliance-type relationship for over 60 years, as are Philips and Matsushita (Business International Corporation, 1987). These developments were the preamble to the growth of a relationship orientation to marketing, in particular in the post-industrial era, in the rebirth of direct marketing between producers and consumers (Sheth & Parvatiyar, 1995). Another view of how relationship marketing evolved is the changing perspective of marketing strategies from transactions to relationships. Table 2.1 shows a comparison between transaction marketing and relationship marketing strategies.

Based on Table 2.1, marketers and practitioners can see obvious differences and advantages. For every type of product and service a variety of strategic approaches can be used. Gummesson (1994, p.16) explains that “not all relationships are important to all companies all of the time…some marketing is best handled as transaction marketing”.

Table 2.1: Marketing strategies of transaction and relationship marketing

The strategy continuum	Transaction Marketing	Relationship Marketing
Time perspective	Short-term focus	Long-term focus
Dominating marketing function	Marketing mix	Interactive marketing (supported by marketing mix activities)
Price elasticity	Customers tend to be sensitive to price	Customers tend to be less sensitive to price
Dominating quality dimension	Quality of output (technical quality dimension) is dominating	Quality interactions (functional quality dimension) grows in importance and may become dominating
Measurement of customer satisfaction	Monitoring market share (indirect approach)	Managing the customer base (direct approach)
Customer information system	Ad-hoc customer information survey	Real-time customer feedback system
Interdependency between marketing, operations and personnel	Interface of no or limited strategic importance	Interface of substantial strategic importance
The role of internal marketing	Internal marketing of no or limited importance to success	Internal marketing of substantial strategic importance to success
The product continuum	Consumer packaged consumer Industrial services	
	Goods → ← durable → ← Goods	

(Source: Grönroos, 1994)

Grönroos (1994, p.10) further elaborates that "the best strategy may depend on what types of customer the firm is serving and on where in its life cycle the business is. For example, even in a service industry a newly established business would probably benefit most from a transaction-type strategy, because it needs to get a sufficient number of exchanges or transactions in order to create the cash flow required to survive. However, as this hypothetical service firm becomes more established, it would probably be better to turn to a relationship-type strategy." Notably, in the presence of competitors and escalating demand, the relationship marketing strategy has become essential and applicable in the supply chain.

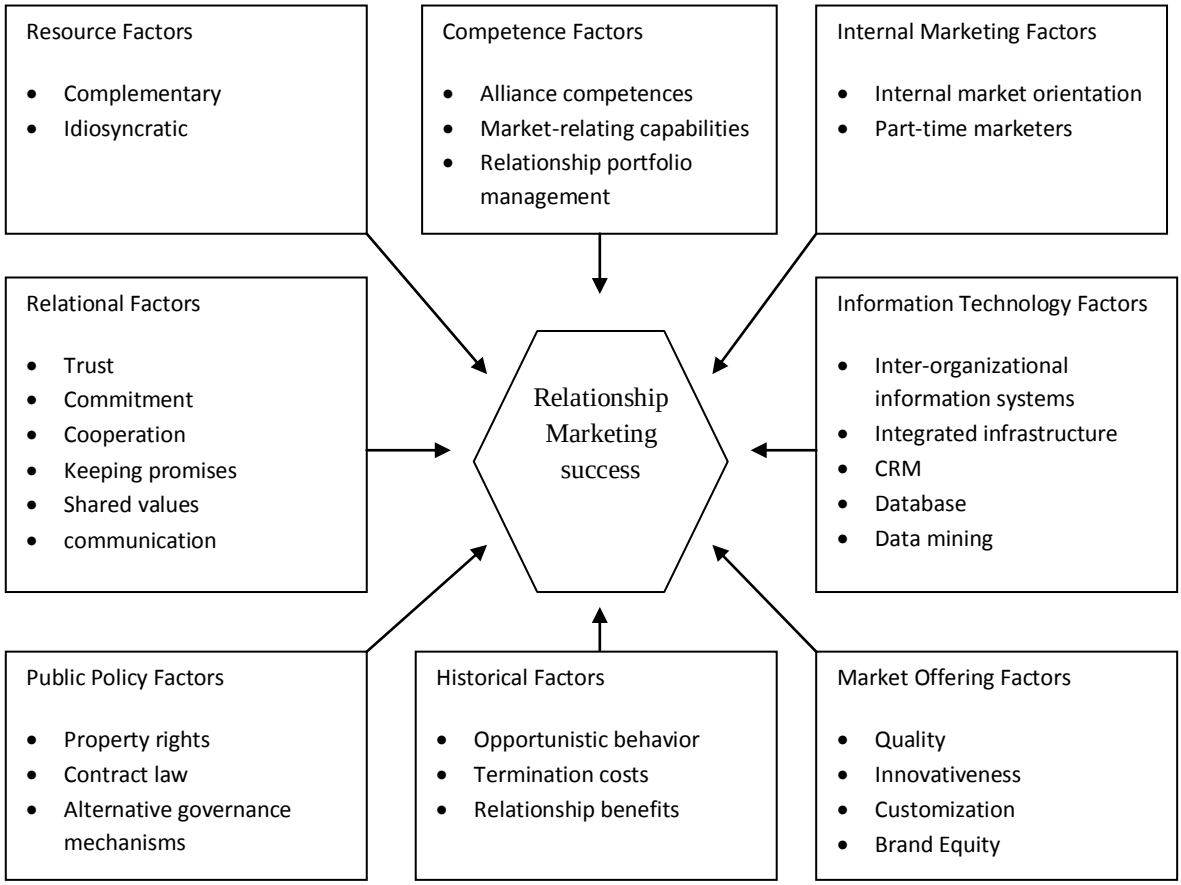
2.3.4 Why is relationship marketing so prominent recently?

Relationship marketing has been widely used and investigated by practitioners and scholars, from both B2C and B2B perspectives. A whole range of research from various

industries can be seen in the marketing literature, such as the banking industry (Matzler, Wurtele, & Renzl, 2006; Ndubisi, 2007a), manufacturing industry (Petison, & Johri, 2008), and agricultural industry (Batt, 2003a; Boniface et al., 2010; Gyau, & Spiller, 2008).

Grönroos (1999) emphasizes that globalization of trade, maturing markets, increased customer knowledge, growing buyer sophistication, increased domestic and global competition and technological development are some of the reasons relationship marketing has become essential. Fischer and Hartmann (2010) further stress that increasing consumer demand and food safety and quality standard requirements in the agri-food industry also induce a high intensity of relationship marketing.

Figure 2.2 Factors influencing relationship marketing success



Source: Adapted from Hunt et al., (2006)

Hunt et al. (2006) explain that the success of relationship marketing is influenced by factors such as resource factors, competence factors, internal marketing factors, relational factors, public policy factors, historical factors, market offering factors and information technology factors (see Figure 2.2). Hunt et al. (2006) drew most of these factors from various literature streams such as strategic management literature, relationship marketing

literature and information technology literature. Yet the factors are significant and contribute to relationship marketing success in many ways.

Over the years, in the relationship marketing stream of literature, many scholars have identified the benefits gained through practising and applying relationship marketing, such as: (1) strengthening competitive advantages in the market place (Hunt, Arnett, & Madhavaram, 2006); (2) achieving financial and non-financial performance (Gyau, & Spiller, 2008; O'Toole, & Donaldson, 2000); (3) capturing customer/supplier loyalty (Boniface et al., 2010; Rauyruen, & Miller, 2007); (4) increasing partners' commitment and satisfaction (Caceres, & Paparoidamis, 2005; Cambra-Fierro, & Polo-Redondo, 2008); and reducing transaction costs (Gow, Streeterc, & Swimend, 2000; Hunt, & Lambe, 2000). These benefits have consistently attracted more scholars and practitioners to the relationship marketing research, including the agriculture and agricultural food industry.

In the next section, a more narrowly focussed perspective of relationship marketing in the buyer-seller relationship is presented. The discussion is mainly focused on relationship marketing research in the agri-food industry and its importance to the respective actors in agri-food supply chains.

2.4 Emphasis on buyer-seller relationships in agriculture

The purpose of relationship marketing is to enhance marketing productivity by achieving efficiency and effectiveness (Gronroos, 1991). This is a crucial and essential role for supply chain management especially in the agri-food industry. Several factors have led to a much more coordinated and integrated supply chain such as: (1) increasing food demand; (2) rising consumer health awareness; (3) foreign direct investment (FDI); (4) market concentration; (5) information and communication technologies; and (6) human resource skills development in agriculture.

The issue of increasing food demand is highly related to urbanization, population growth and income growth, in developing countries in particular (Warr et al., 2008). These changes inevitably impel agribusiness firms and food suppliers, as well as food producers, to be coordinated and integrated in their supply chain management. As for the increasing health awareness factor, issues such as food labelling, food traceability and food quality have become critical to food processors as well as food producers (Grunert, TinoBech-

Larsen, & Bredahl, 2000; Prescott, Young, O'Neill, Yau, & Stevens, 2002). Coping with consumers' wants, preferences and needs has changed the structure of the agri-food supply chain. Production, processing, and distribution systems have been adapting to reflect consumer demands. The food retail industry, including hypermarkets and major centres, is moving rapidly in time with the changes in the emerging economy.

The new structure demands fast and efficient delivery, graded, consistent and high quality produce and consumer-centred marketing strategies. A traditional marketing system that concentrates on building respondents' production capabilities is no longer sufficient to ensure sustainable income and productivity growth (Man, & M. Nawi, 2010). Therefore, production activities must be linked to market demand and must be examined within the context of the whole supply chain. One of the many types of market linkage arrangements is contract farming (CF).

Contract farming can be defined as "an agreement between farmers and processing and/or marketing firms for the production and supply of agricultural products under forward agreements, frequently at predetermined prices" (Eaton, & Shepherd, 2001). Small-scale producers establish the production arrangement with agribusiness firms. These arrangements are made carefully and precisely to achieve high quality agricultural production. Through this scheme, small producers are able to gain economic benefits and at the same time stimulate rural development in the respective area (Baumann, 2000; Eaton, & Shepherd, 2001; Bijman, 2008).

Mighell and Jones (1963) distinguish three types of contract: a market-specification (or marketing) contract; a production-management contract; and a resource-providing contract. These contracts differ in their main objective, control and function. The level of control and ownership in each type of contract is varied and diversified in most developing countries (Glover, Lim et al. 1992; Rehber 2008).

A market-specification contract is also known as a marketing contract. The processor and producers make a pre-harvest agreement on the sale of certain crops or livestock. The contractor reduces producers' uncertainty by buying their production in advance. In this contract, producers are obliged to fulfil certain conditions such product quality, size, amount supplies, and other special requirements. The contractor has the right to reject any

products which are not up to the standard specified in the contract. Even though producers have full control and ownership of their own production, they also have to take on the risk of their production activities.

The production-management contract, however, is a more specific and comprehensive type of contract. In this contract, the production process is monitored and controlled by the contractor. The producers need to follow the production process and method as specified in the contract, and the contractoris the only buyer of the production at a pre-determined price. Generally, the level of production control and producers' ownership is inevitably shifted to the processor. The producers, however, through this contract transfer their market risk to the contractor.

Another type of contract is the resource-providing contract. It is an extension of the production-management contract. This contract not only provides market access but also key inputs for the agricultural production. The processor provides input provision such as seed and fertilizer. They also introduce new technology, skills and production management processes. Producers mostly prepare the land and labor for the production. Although most of the production activities are controlled and monitored tightly by the contractor, producers still share a substantial part of the risk in making production decisions. The three types of contract address and reduce transaction cost accordingly (see Bijman, 2008).

Another traditional type of contract is the informal contract which is a verbal arrangement between the processors and producers. Bijman (2008:6) states that "Although contract farming is becoming more important in developing countries, this does not necessarily lead to more formal contracts. Informal contracts are generally more efficient". He stresses that informal contracts may be less costly and in a simple, informal contract, a self-enforcement contract is needed. Self-enforcement contracts refer to producers' own initiative to honour the contract. Bijman (2008) notes that a producers' reputation plays an important role in self-enforcing agricultural contracts. Producers and processors in this informal contract automatically renew their (verbal) agreements unless one party makes an early commitment not to renew or comply with the contractual arrangements.

Thus, the emergence of contract farming activities has become one of the reasons for the rise in multinational companies' investment in developing countries (Glover, 1984).

Although the benefits of this arrangement to farmers, such as market access and constant income, are practically guaranteed, the negative consequences of contract farming should not be taken lightly. Through various types of contract farming models, foreign companies such as Dutch Lady, Nestle and Dairy Farm Holdings Limited establish their footing in developing countries and bring their professional workers, introduce new technologies and also new cultures into local organization. New culture means adaptation to new standards of beliefs and practices while new technology means bargaining power to the foreign company (Glover, & Lim, 1992; Guo, 2008; Rehber 2008). Therefore, the changing patterns of consumption and emergence of FDI, especially in developing countries, are making the buyer and seller interaction in the food supply chain extremely important.

Kirsten (2002) raises some issues in contract farming that relate to relationship problems such as power asymmetries, and emphasizes that trust and other relational variables are essential for buyer-seller relationships in agriculture. The power asymmetries have been regularly discussed in the contract farming literature (Wilson, 1986; Kirsten, 2002; Singh, 2002) where most argue that the processor gains considerable power from contracting, particularly from the production arrangements. In the production-management contracts, the degree of the producers' ownership and production control is shifted towards the processor.

Other research indicates that high power relations create souring contractual relationships (Batt, 2003; Gyau, & Spiller, 2007a) and significantly reduce producers' trust in the processor. Singh (2002, p.1635) states clearly that "though contracting has led to higher incomes for the farmers and more employment for labor, it is not smooth sailing for firms and is unlikely to be sustained due to lack of trust between firms and farmers".

Therefore, relationship marketing in the agricultural industry, particularly from the buyer and seller perspective, has been given much attention, ranging from building trust to improving relationship quality, capturing loyalty and increasing commitment between exchange partners (Boniface et al., 2010; Batt, 2003; Ghosh, & Fedorowicz, 2008; Gyau, & Spiller, 2007a; Lu, Feng, Trienekens, & Omta, 2008; Reynolds, Fischer, & Hartmann, 2009).

Fischer and Hartmann (2010) further elaborate that the development of market concentration, information and communication technologies and human resources in agriculture requires closer and more sustainable relationships. They argue that hypermarket and supermarket growth in developing countries changes the traditional structure of the supply chain, from many food retailers to one or two concentrated food markets. Confronted with increasing market power from hypermarket players, most agricultural producers and processors are forced to engage with these big players. Thus, those with good relationships may stay longer in the food market and vice versa.

In the emerging economy, workers' skills and willingness to change have been crucial issues in any organization. Having quality and skilful workers continues to enhance and improve firms' competitive advantage. Yet, in the presence of positive relationships between firms, a shortage of skilled workers can be overcome and close relationships between firms encourage learning organization as well as sustainable business relationships through mutual understanding and skills exchanges.

2.4.1 Stages of buyer-seller relationship development

Building relationships is a complex and dynamic process. In fact, they are not built overnight but through a series of steps and interactions. From the buyer and seller perspective, Ford (1980) introduces five stages of relationship development: (1) the pre-relationship stage; (2) the early stage; (3) the development stage; (4) the long-term stage; and (5) the final stage (see Table 2.2).

As shown in Table 2.2, the development of buyer/seller relationships starts with the pre-relationship stage wherein the buyer is looking for a potential supplier and the characteristics of the supplier are being scrutinised in detail. Ford (1980, p.343) explains that the distance between firms can be categorized into several aspects:

"*Social distance*, being the extent to which both the individuals and organizations in a relationship are unfamiliar with each other's ways of working;

Culture distance, being the degree to which the norms, values or working methods between two companies differ because of their separate national characteristics;

Technological distance, being the differences between the two companies' product and process technologies;

Time distance, being the time which must elapse between establishing contact or placing an order and the actual transfer of the product or service involved;

Geographical distance, being the physical distance between the two companies' locations".

Table 2.2: Development of buyer/seller relationships

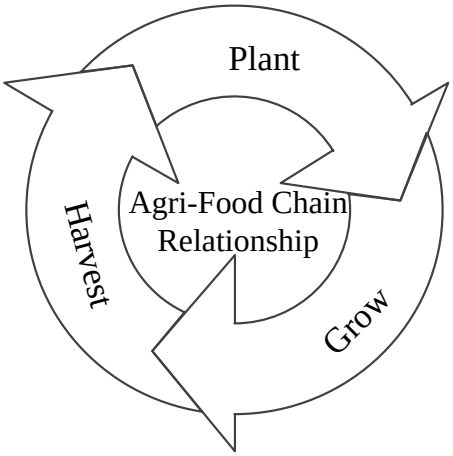
1	2	3	4	5
The Pre-Relationship stage	The Early Stage	The Development Stage	The Long-Term Stage	The Final Stage
Evaluation of new potential supplier Evaluation initiated by: -particular episode in existing relationship -general evaluation of existing supplier performance -efforts of non-supplier -other information sources -overall policy decision Evaluation conditioned by:-experience with previous supplier -uncertainty about potential relationship -"distance" from potential supplier Commitment: Zero	Negotiation of sample delivery Experience: Low Uncertainty: High Distance: High Commitment: Actual-Low Perceived: Low Adaptation: High investment of management time. Few cost savings	Contract signed of delivery build-up scale deliveries Increased Reduced Reduced Actual-Increased Perceived- Demonstrated by informal adaptation Increasing formal and informal adaptation. Cost saving increase	After several major purchases or large High Minimum development of institutional Minimum Actual-Maximum Perceived-Reduced Extensive adaptation. Cost saving reduced by institutionalisation	In long established stable market Extensive institutionalization Business based on industry codes of practice

Source: Adapted from Ford, 1980

The second stage (the early stage) is where the buyer starts to develop a relationship. Once the buyer is convinced that the supplier meets his requirements, then certain factors such as experience, uncertainty, distance, between firms, commitment and adaptation will be evaluated. In the next stages (from the development stage to the final stage), both firms start to develop a close relationship, high collaboration and business adaptation. Ford (1980) further argues that while a developing relationship can be achieved in stages, sustaining a long-term relationship between exchange partners will be a great challenge.

In the agri-food supply chain perspective, Lu, Batt and Fischer (2010) propose a much more practical model of relationship management (see Figure 2.3) and conceptualize it based on agricultural production processes. They argue that just as crop production goes through the process of planting, growing and then harvesting, so also does a business relationship (see Figure 2.3).

Figure 2.3: The agri-food chain relationship



Source: Adapted from Lu et al., 2010

The preliminary step of a relationship is the business planting process during which three main things occur: (1) selection of the partner; (2) alignment of business goals and procedures; and (3) allocation of resources (time, money, etc.). The second step is the growing process when both parties will start to communicate effectively, collaborate intensively, resolve problems jointly and nurture trust. Thirdly, exchange partners start to harvest, and (1) share rewards/ benefits fairly and (2) evaluate, and learn from outcomes (Lu et al.,2010).

Therefore, as most players in agricultural settings, such as farmers, traders, producers and processors, have known each other and interacted for a certain period of time, it is important to understand the nature of long-term relationships, as well as the details of certain essential relational variables such as trust, commitment and loyalty. Some research related to the understanding of buyer-seller relationships is discussed in the next section.

2.4.2 Relational variables' influence on buyer-seller relationships

Scholars have identified and investigated various factors that promote long-term relationships between exchange partners. The research has significantly improved the understanding of agri-food supply chains, as some supply chains are long and complicated while others are short but dynamic.

Understanding and building trust in the buyer-seller relationship has been given much attention and has sparked significant outcomes as well as managerial implications for the agriculture industry. Batt (2003), in his research of the fresh fruit and vegetables (FFV) industry, found that certain factors such as satisfaction with the exchange transaction and sharing of similar goals improve growers' trust in the traders, while use of power by the traders and information asymmetry reduce growers' trust.

Gyau and Spiller (2007), in investigating the relationships between FFV exporters and importers, found other factors such as price satisfaction, non-economic satisfaction and goal attainment increased trust, while factors that reduced trust related to use of power and cultural dissimilarity. Another interesting study about trust was completed by Lu et al. (2008). They found that both seller and buyer trust in exchange partners was highly influenced by *Guanxi networks,* which relate to "personal connections or relationships on which an individual can secure resources or draw benefits as well as in social life" (Lu et al., 2008, p.254).

Other relational variables which have been highlighted in buyer-seller relationships are commitment, satisfaction and loyalty. In many ways, scholars have constructed the variables through different settings and influences. Some scholars identified the significance of commitment by looking at the influences of satisfaction and trust (Kwon, & Suh, 2004), while others used only trust and commitment as mediating constructs in buyer-

seller relationships (Morgan, & Hunt, 1994). Another study investigated the influence of satisfaction on trust (Ganesan, 1994).

A recent study uses all three relational variables, namely trust, satisfaction and commitment, to develop relationship quality and measure its influence on loyalty (Rauyruen, & Miller, 2007), while others use only satisfaction and commitment to measure relationship quality (Gyau, & Spiller, 2010). The list goes on with numbers of scholars investigating the determinants of and influences on relationship quality (Naude, & Buttle, 2000; Ndubisi, 2007b). Overall, relational variables have been used consistently and significantly in understanding the building and strengthening of buyer-seller relationships.

2.5 Methodological approaches and data analysis

In Chapter1, a conceptual model was developed to provide a comprehensive understanding of the whole thesis. The author used difference methodology such as Structural Equation Modeling (SEM), Cluster Analysis and Logit Regression for data analysis.

2.5.1 Structural Equation Modeling

Structural Equation modelling (SEM) can be used to test (and consequently to either support or reject) theoretical assumptions with empirical data. It is therefore essential to have a sound understanding of the structure of theories to understand the different components of structural equation modeling.

According to Baggozzi and Phillips (1982), a theory may consist of three different types of concepts: (a) theoretical concepts, which "are abstract, unobservable properties or attributes of social unit of entity" (p.465); (b) empirical concepts, which "refer to properties or relations whose presence or absence in a given case can be inter-subjectively ascertained, under suitable circumstances, by direct observations (Bagozzi & Phillips, 1982, p.465); and (c) derived concepts, which are unobservable (like theoretical concepts) but "unlike theoretical concepts…must be tied directly to empirical concepts" (Bagozzi & Phillips, 1982, p.465). Therefore, it is possible to construct a research model that represents a certain theory, simply by converting theoretical and derived concepts into unobservable (latent) variables, and empirical concepts into indicators, which are linked by a set of hypotheses (representing either non-observational hypotheses, the theoretical definitions, or correspondence rules) (Haenlein & Kaplan, 2004).

In this investigation, two types of SEM were used in testing three different models namely, AMOS 17 using SPSS software and (Partial Least Square) PLS using the SmartPLS software 2.0. Both methods are widely used in the marketing literature but vary in terms of application and assumptions. A covariance based method such as AMOS and LISREL was developed by Jöreskog in 1970 while PLS which is known as variance-based SEM was developed by Wold (Jöreskog & Wold, 1982).

Tenenhaus et al, (2005) refer to Jöreskog's SEM model as "hard modeling" (heavy distribution assumptions, several hundreds of cases necessary) and PLS as "soft modelling" (very few distribution assumptions of cases necessary). According to Haenlein and Kaplan (2004), PLS is best used for a small sample size. Covariance-based SEM such as AMOS is best used for "sample size which exceeds 100 observations regardless of other data characteristics to avoid problematic solutions and obtain acceptable fit concurrently" (Nasser & Wisenbaker, 2003, p.754). Other researchers even recommend a minimum sample size of 200 cases (Marsh et al., 1998). In this research the author applied AMOS in one model (Chapter 4) and used PLS for the other two models (Chapter 3 and Chapter 5).

2.5.2 Cluster Analysis

Apart from SEM, this thesis also used cluster analysis using relational variables (such as trust and satisfaction) and price satisfaction dimensions segmentation in Chapter 6. According to Punj and Stewart (1983) "cluster analysis provides one, empirically based, means for explicitly classifying objects. Such a tool is particularly relevant for the emerging discipline of marketing which is still wrestling with the problems of how best to classify consumers, products, media types, and usage occasions" (Punj & Stewart, 1983, p.135).

Punj and Stewart (1983) further elaborate that the use of cluster analysis in marketing is: (a) to identify "all segmentation (people, markets, organizations) that share certain common characteristics (attitudes, purchase propensities, media habits, etc.)" (p.135); (b) to seek better understanding of buyer behaviours; (c) for the development of potential new product opportunities through brands/ products segmentation; (d) an alternative to factor analysis and discriminant analysis. Finally they state "cluster analysis has been used as a general data reduction technique to develop aggregates of data which are more general and

more easily managed than individual observations" (Punj & Stewart, 1983, p.136). In this study, cluster analysis was used to identify buyer-seller relationship segmentation.

2.5.3 Logit Regression

To gain a better understanding of the dairy industry's development and viability in Malaysia in the near future, a consumer study was conducted and factors influencing consumer preferences for dairy products such as fluid milk and powdered milk was investigated.

In order to understand the probability for a consumer to increase consumption of fluid milk or dairy products, two logit regressions were developed based on the traditional logit regression model (Greene, 2003) :-

$$(1)\,\Pr ob(Y=1 \mid X_i) = \frac{e^{x'\beta}}{1+e^{x'\beta}}$$

The logit model has been widely used in many fields, including economics, market research, and transportation engineering (Greene, 2003). In the consumer study, factors such as age, level of education and perceptions of fluid milk were added in the logit equation to understand the consumers' consumption probability. By looking at the estimated coefficients and marginal effects, the probability for a consumer to increase their consumption of dairy products and fluid milk was known.

2.6 Conclusion

Consistent with the objectives of this dissertation, discussion of the development of relationship marketing and the importance of buyer-seller relationships in the food supply chain has been presented in this chapter. Some related theoretical approaches have been briefly discussed, with links to the motivation for buyer-seller relationship research.

This chapter has provided a general overview of relationship marketing and its influences from the buyer and seller perspective. For this study, the conceptual framework presented in Chapter 1 (Figure 1.1) provides a clear understanding of how some relational variables have been used to explain relationship quality and as a measure of long-term relationship. Justification of the methodologies used has also been presented and a detailed explanation of each methodology will be given in the respective chapters.

In the next chapters, comprehensive and detailed reviews of the literature are presented which further explain the conceptual model and motivation for each chapter.

This research presents five articles: four articles (Chapters 3 to 6) on buyer-seller relationships in the dairy industry in Malaysia, addressing the issues of loyalty, long-term relationship, price satisfaction dimensions and relationship segmentation; and one article (Chapter 7) looking at consumers' preferences for and consumption of dairy products, all of which is an attempt to understand the dairy supply chain in Malaysia and its sustainability in the near future.

CHAPTER 3: The role of long-term relationships in Malaysia's fresh milk supply chain[1]

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Statement of Authorship

Bonaventure Boniface developed the survey questionnaire, collected and analysed the data, developed the conceptual model and wrote the article. He is also the corresponding author.

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Signature Date 16th June 2011

Amos Gyau supervised the conceptual model and helped interpret the data, and edited the text of the article. He gives consent to Bonaventure to present this article for the Doctor of Philosophy examination.

_____

Signature Date 2nd July 2011

Randy Stringer supervised the development of this work, edited the text of the article, reviewed the final draft of the manuscript and gives consent to Bonaventure to present this article for the Doctor of Philosophy examination.

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Signature Date 4th July 2011

Abstract:

Purpose: This paper explores how efficiency gains and competitive supply chains can be developed through close, long-term relationships between dairy producers and processors in Malaysia.

Methodology: A conceptual model of inter-firm relationships is developed and tested using Partial Least Squares (PLS) statistical analysis on data collected from 133 dairy producers in Malaysia.

Findings: The results suggest that improving communication, fostering mutual goals and enhancing price satisfaction influence positively the buyer-seller relationship quality as perceived by producers, leading to beneficial outcomes for the buyer and seller relationship.

Implications: To meet their objectives of quality and timely milk supplies in the face of rapidly expanding demand, processors must seek more effective communication strategies and develop common objectives with dairy producers.

Originality: This study examines supply chain management in the context of buyer and seller relationships in the food sector of an emerging economy.

Keyword: Long-term relationships, Relationship quality, Dairy supply chain, Malaysia

Introduction

Agri-food supply chains have become much more competitive and dynamic. Growing urban populations, expanding per capita incomes, changing lifestyles and maturing agribusiness markets are altering food consumption, production and distribution patterns. The competitive market requires effective supply chain management by promoting closer and long-term working relationships between partners (Spekman et al., 1998)

Like other emerging economies in Asia, Malaysia's dairy industry continues to undergo rapid and fundamental structural changes. Motivated by consumers' changing lifestyles, increasing health awareness and altering food consumption, the domestic dairy supply chain confronts daunting challenges. The local dairy industry is barely keeping pace with its share of demand expansion. Past policies to promote milk production include government marketing assistants and producer subsidies. Public and private sector research programs focus primarily on improving yields through breeding and feeding initiatives.

This paper emphasizes the importance of exploring dairy supply chain management and argues that important efficiency gains such as reduced transaction costs, effective distribution networks and secured supplies can be enhanced by exploring collaborative strategies with win-win outcomes for both milk producers and milk buyers.

Supply chain management in the agri-food industry

The main objectives of supply chain management (SCM) include gaining distribution efficiency, leveraging the supply chain, maintaining low transaction costs and at the same time securing constant supply. SCM is defined as a special form of strategic partnership between retailers and suppliers, with positive effects on the overall performance of the channel (Alvarado and Kotzab, 2001). Spekman et al. (1998) argue that supply chain management will work effectively when actors along the supply chain work in collaboration. They emphasize that the movement from cooperation to collaboration requires levels of trust and commitment that are beyond those typically found in just in time (JIT), quick response (QR) and efficient consumer response (ECR) relationships (Spekman et al., 1998; Sparks and Wagner, 2003). Thus, having effective and close relationships along the chain create competitive advantage (Haar et al., 2001).

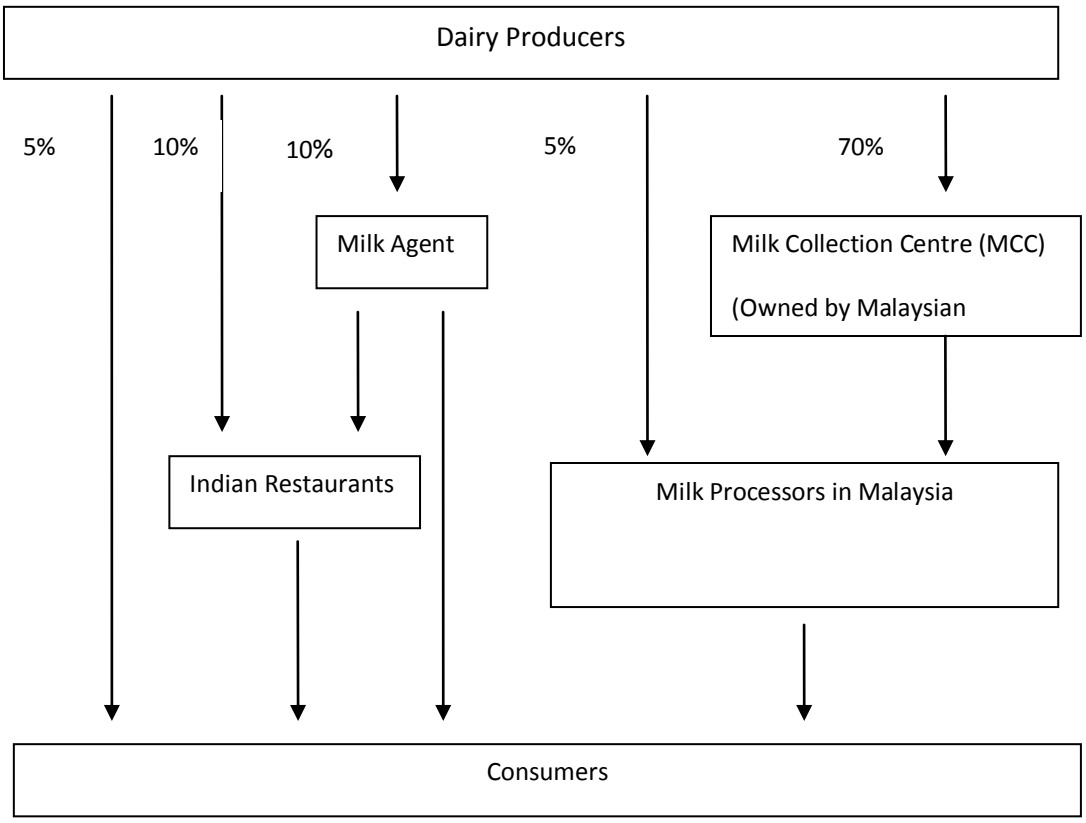
Therefore, research on agri-food SCM has recently investigated the role of chain relationships between the buyers and the sellers. The many food chain issues currently addressed in the relationship literature include research that investigates: (i) the determinants of suppliers' trust (Batt, 2003); (ii) how commitment shapes economic

outcomes (Spiller and Schulze, 2007); (iii) the factors that influence relationship sustainability (Reynolds et al., 2009); (iv) the use of trust to manage economic or food safety shocks (Lindgreen and Hingley, 2003); (v) the effects of producers' loyalty (Boniface et al., 2010); (vi) how traditional buyer-seller networks impact participation in modern food retail chains (Lu et al., 2008); and (vii) how financial and non-financial performance influences inter-firm relationships (Gyau and Spiller, 2008).

Malaysia's dairy industry and significance of buyer and seller relationships

Malaysia's dairy market is expected to grow significantly due to consumers' increasing income, health awareness, and urbanization. Milk demand is expected to increase by more than 30% in the half decade period leading up to 2014 (Dong, 2006). Domestic milk production, however, is just keeping up with its small share of the growing milk demand. The development has changed the domestic dairy supply chain with increasing numbers of milk buyers against fewer numbers of dairy producers (see Figure 1).

Figure 1: Malaysian fresh milk supply chain



Source: Boniface et al. (2010)

The Malaysian dairy industry has long been supported by the government "dairy project scheme". The industry has been expanding with gradually increasing numbers of small-scale producers and a few large-scale producers (Bhaskaran, 1999). In the government scheme, producers are trained and guided by the Department of Veterinary Services, Malaysia. Milk yield is sent to the government Milk Collecting Centre (MCC) that buys milk at predetermined and subsidized prices (Well, 1981). Nevertheless, this arrangement does not restrict the producers from selling their milk yield to other buyers such as milk processors, Indian restaurants, milk agents and direct consumers. As shown in Figure 1, the multiple choices of buyers inevitably create a competitive market within the industry.

Figure 1 indicates that Malaysia's dairy supply chain consists of three main actors: (1) the producers; (2) the buyers (which also can be the milk suppliers to the consumers); and (3) the consumers. Only in a few portions (5%) of the chain does the producer interact directly with consumers. This indicates the importance of the buyer and the seller having improved understanding, through collaboration and achieving long-term working relationships along the chain. Quality relationships between both parties assure constant milk supplies and reasonable milk prices which in turn enhance the milk supply chain.

Most producers have been in the business for more than 10 years and have substantial expertise and solid husbandry management, including modern breeding technology and improving milk quality (Boniface et al., 2010). Some producers are well established in developing their own feed for increasing milk yields. Considering the expertise and knowledge in the business, establishing and maintaining trusted buyer relationships is crucial for producers. As for milk buyers, confronting higher milk demand, producers' loyalty is essential. In other words, both parties need to work together and collaborate in coping with escalating milk demands.

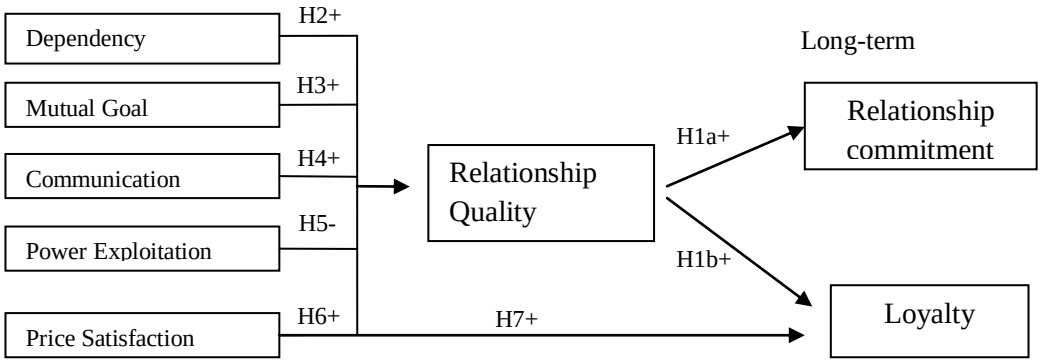
This study examines the nature of long-term relationships in Malaysia's dairy supply chain, aiming to better understand suppliers' needs and preferences to promote mutual benefits (Ramsay and Wagner, 2009). The specific objectives are to investigate: (i) the suppliers' relationship commitment and loyalty as a measure of long-term relationships; and (ii) the determinants of relationship quality.

In the remaining sections of the paper we develop a conceptual framework and hypotheses based on theory and previous studies. Next, PLS statistical modelling is used to test the conceptual model. Finally, the results are discussed and conclusions drawn.

Conceptual framework

The conceptual framework model (Figure 2) shows perceived relational norms of dairy producers' influence on their perception of relationship quality with their buyers. The perceptions influence their level of commitment and loyalty, two long-term relationship indicators used previously (Venetis and Ghauri, 2004; Boniface et al., 2010).

Figure 2: Conceptual model for relational behaviours, relationship quality and long-term relationships



Relationship Commitment and Loyalty

Commitment and loyalty between exchange partners take time and effort to develop, and provide appropriate indicators to measure how the relationship is developing (Venetis and Ghauri, 2004). This study considers the existence of relationship commitment and loyalty as a measure of long-term relationships (LTR).

Various definitions are used to reflect specific aspects of commitment. For instance, Dwyer et al. (1987*)* stress a "behavioural dimension," defining it as "an implicit or explicit pledge of relational continuity between exchange partners" (Dwyer et al., 1987, p19). Others refer to attitudes such as a desire for stable relationships, willingness to make short term sacrifices for the sake of maintaining the relationship, and a belief in relationship stability (Morgan and Hunt, 1994). Without commitment, exchange partners lack the ability to ascertain the duration of the relationship and therefore the long-term viability of their firm.

Commitment is described by Morgan and Hunt (1994) in relation to the value of the relationship, as exchange partners believe that the relationship is important enough to warrant maximum efforts to maintain it. Geyskens et al. (1996) distinguish between affective commitment and calculative commitment. Affective commitment refers to the desire to continue a relationship because it is enjoyed for its own sake and calculative

commitment refers to the extent of the need to maintain a relationship due to significant perceived termination or switching cost (Vanetis and Ghauri, 2004).

Loyalty is often categorized into three streams: (1) behavioural; (2) attitudinal; and (3) composite (Rauyruen and Miller, 2007). Loyalty is essential in establishing long-term relationships. From the buyer and seller perspective, loyalty is recognized as encouraging word of mouth marketing (Dick and Basu, 1994), and prolonging business relationships (Boniface et al., 2010). Rauyruen and Miller (2007) define behavioural loyalty as the willingness of average customers to repurchase products and maintain a relationship with suppliers, and describe attitudinal loyalty as "the level of customer psychological attachment and attitudinal advocacy towards the service provider/supplier". Composite loyalty assumes that loyalty can only be seen when a customer both continuously purchases or uses the same product and recommends others to buy the same products (Rauyruen and Miller, 2007).

Dimensions of relationship quality

Relationship quality (RQ) is defined as the producers' perception of how well their relationships fulfil the expectations, predictions, goals and desires of the customer (Naudé and Buttle, 2000). RQ is considered an appropriate indicator for success of a relationship (Hennig-Thurau and Hansen, 2000). Since it conveys a customer's impression about the whole relationship (Wong and Sohal, 2002), it is manifested in several distinct but related constructs.

However, no consensus exists among researchers on the set of constructs or variables constituting relationship quality, or even its antecedents (Naudé and Buttle, 2000). As a result, researchers use different variables to operationalize the relationship quality construct. Leuthesser (1997) and Naudé and Buttle (2000) highlight the relevance of trust, satisfaction, commitment, opportunism, customer satisfaction, and ethical profile, in their RQ measurement.

In this study, we consider RQ as the measure of trust and satisfaction (Gyau and Spiller, 2007) between the dairy producers and their buyers. Relationship commitment and loyalty are considered as an outcome of good relationships and an indicator of LTR. Relationship quality may influence commitment (Morgan and Hunt, 1994) and loyalty (Rauyruen and Miller, 2007). Based on the above discussion we propose that:

H1: The producers' long-term relationships with buyers are influenced positively by their perception of relationship quality. More specifically:

H1a: The perception of relationship quality has a positive influence on producers' level of relationship commitment.

H1b: Relationship quality has a positive influence on producers' loyalty.

Dimensions of relational behaviour

There are several relational factors that may influence buyer and seller relationships such as communication, cultural similarity, joint activities, dependency, flexibility and mutual goals - all of which are explored in the literature. Each variable plays a role in influencing relationship quality measures, including trust and satisfaction (Naudé and Buttle, 2000; Gyau and Spiller, 2007).

From the buyer and seller perspective, relational behaviours are known to improve business performance (Gyau and Spiller, 2008) and enhance competitive advantage (Haar et al., 2001). For instance, constant communication and information sharing avoid cultural differences (Gyau and Spiller, 2007) and promote loyalty with exchange partners (Boniface et al., 2010). Even relationship networks such as Japanese "Keiretsu" and Chinese "Guanxi" (Lu et al., 2008) are developed from the relational exchanges of cooperation, culture and communication in long-term relationships. Therefore, fostering long-term relationships with business partners proves to be significant and essential for business sustainability and profitability (Fischer and Hartmann, 2010).

Dependency: When an exchange relationship is characterised by a high level of dependency (a high level of the supplier's dependence on the buyer or a high level of the buyer's dependence on the supplier), both parties recognise that relationships provide greater benefits than either partner can attain alone (Mohr and Spekman, 1994). Eventually, through inter-dependent relationships such as contracting, merger and joint ventures (Heide, 1994), firms reduce business uncertainty (Pfeffer and Salancik, 1978). The inter-dependency between exchange partners may encourage joint actions, improving relationship norms such as trust and satisfaction (Batt, 2004) which develop quality relationships (Gyau and Spiller, 2007). We hypothesize that:

H2: A high degree of dependency has a positive influence on producers' perception of relationship quality.

Mutual Goals: Goal mutuality is the act of working together to achieve similar objectives and expectations (Batt, 2003) and can be accomplished through joint actions and motivated by the desire to achieve sustainable relationships (Fischer and Hartmann, 2010). The presence of mutual goals between supply chain actors encourages exchange partners to be flexible and tolerant (Gyau and Spiller, 2007). Over time, working together towards a mutual objective builds trust (Batt, 2003). Goal mutuality may induce partners to stay in the relationship and improve the producers' relationship quality, as each partner strives to accomplish similar goals and objectives. Therefore we conceptualize that:

H3: Mutual goals have a positive influence on producers' perception of relationship quality.

Communication: Anderson and Narus (1990) define communication as the formal and informal sharing of meaningful and timely information between firms. Reynolds et al. (2009) further argue that effective communication occurs when meaningful and detailed information is shared between two parties. They propose that timely communication solves problems adequately, and promotes sustainable business relationships. Research shows that communication is positively related to trust and satisfaction in various buyer and seller relationship settings (Anderson and Narus, 1990; Morgan and Hunt, 1994) and also influences relationship quality (Naude and Buttle, 2000). We hypothesize that:

H4: Communication has a positive influence on producers' perception of relationship quality.

Power exploitation: Power exploitation refers to the degree of power usage between business partners (Batt, 2004). The use of excessive power by exchange partners may reduce trust and satisfaction levels. Gyau and Spiller (2007) observe that power exploitation has a negative relationship with trust. They state that the use of threats in business reduces suppliers' trust. Batt (2003) emphasizes that the level of trust decreases when the powerful partner uses power to coerce the other partner. Over a period of time,

power exploitation by exchange partners may negatively influence quality relationships and encourage switching behaviour. We therefore propose that:

H5: Power exploitation has a negative influence on the producers' perception of relationship quality.

Price Satisfaction: Price satisfaction refers to a positive affective state resulting from price related factors. Matzler et al. (2007) state that price satisfaction is a multi-dimensional construct. They propose five dimensions of price satisfaction comprising price-quality ratio, price fairness, price reliability, price transparency and relative price. Gyau and Spiller (2007) found that price satisfaction influences the perception of relationship quality and therefore recommend buyers provide reasonable and fair prices to sellers to improve their perception of relationship quality. Other researchers reveal that price satisfaction may reduce switching costs (Matzler et al., 2007) and build partners' loyalty (Boniface et al., 2010). We hypothesize that:

H6: Price satisfaction has a positive influence on the producers' perception of relationship quality.

H7: Price satisfaction has a positive influence on the producers' loyalty.

The next section presents the outcome of using a PLS approach of structural equation modelling. We endeavour to investigate how the relational variables influence relationship quality and its effect on enhancing long-term relationships in Malaysia's dairy industry.

METHODOLOGY

Survey design

Data was collected from 133 dairy producers through face to face surveys in Malaysia in June and July, 2009. A random sample of producers came from the database obtained from the Department of Veterinary Services, Malaysia (DVS). Four states were selected: Johor, Melaka, Sabah and Selangor. These four states are representative of dairy farm operations throughout Malaysia, providing examples of the marketing channels, contracting methods

and memorandum of understanding used between producers and buyers. The various scales of operation in Malaysia are also best represented by the selected states.

The questionnaires were designed and developed based on an extensive review of the literature on relational behaviours, buyer-seller relationships and relationship marketing (see Table 2 and Table 3). We also took note of the opinions of key informants in Malaysia's dairy industry, interviewing and testing the questionnaire along the supply chain as well as interviewing related agencies (public and private) to understand the dynamics of dairy producer-buyer relationships.

The questionnaire was pre-tested with three supply chain and alliance specialists and 10 dairy farmers in Malaysia. Participants were asked to provide feedback on the length, content, and format. Previously used scales were taken as a reference, and we consider the scales used for this survey to be new.

The face-to-face interviews were conducted on the respondents' premises, lasting between 45 minutes to 1 hour. Five trained enumerators interviewed the 133 randomly selected dairy producers. To ensure consistency, farmers were asked to evaluate the relationship with their main buyer, defined as the buyer who buys the largest quantity of their fresh milk.

Respondent description

The majority of respondents were men, with an average age of 45 years and 13 years of experience in dairy farming. The herd size averaged 85 cows, with the largest herd having 2,455 cows. The daily average milk yield was 10 kg per cow. The highest milk yield was 28 kg. The cow breeds were diverse, ranging from pure breeds (Holstein-Friesian) to mixed breeds (Sahiwal-Friesian crosses).

Based on the in-depth interview with the DVS, we were informed that the national average number of years most farmers have been in business is more than 10 years and their level of education is mainly primary or secondary school. Therefore, based on our observation and survey, the respondents' profile of this industry was well represented. The firm size and producers' level of education are summarized in Table 1.

Table 1: Number of producers according to firm size and level of education

Firm Size	*Number of producers*	*Percentage*
Small-scale (1-30 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%

Measurements scales

Measurements for relational behavioural dimensions were developed for communication, information sharing, power exploitation, dependency, mutual goals and price satisfaction variables as shown in Table 2.

Table 2: Aspects of relational behaviour

Norm/Behaviour	Description	Composite statements
Communication	The degree of exchange detailed relevant information and communication among the agents, suppliers and customers (Anderson and Narus, 1990).	• My buyer keeps me informed regularly • I have no problem communicating with my buyer • You and your buyer frequently discuss each other's expectations • We share information regularly with one another

Table 2 (continued): Aspects of relational behaviour

Norm/Behaviour	Description	Composite statements
Mutual Goal	The act of working together to achieve similar objectives and expectations (Gyau and Spiller, 2007).	• My buyer and I share similar goals • My buyer and I always discuss and review our business objectives • We (producer and buyer) have mutual interests in doing business
Price Satisfaction	Price satisfaction refers to a positive affective state resulting from price related factors (Matzler *et al.*, 2007).	• I get a good price-quality ratio • The buyer offers me fair and reasonable milk prices • I agree with the milk price and grading system
Power Exploitation	The degree of power exploitation between business partners (Batt, 2003).	• My main buyer controls all the production information • My buyer has all the power over my dairy production
Dependency	The degree of dependency between business partners (Ganesan, 1994).	• I always rely on my buyer • I have no other alternative buyer

Relationship quality was operationalized with statements reflecting trust and satisfaction adapted from Gyau and Spiller (2007), Ganesan (1994) and Batt (2003). Long-term relationship variables were developed from the relationship commitment literature of Morgan and Hunt (1994) and Geyskens et al. (1996). Loyalty was developed from Rauyruen and Miller (2007). Relationship commitment statements relate to the affective commitment of the producers in this business. Loyalty measurements are inferred from general statements of producers' loyalty (see Table 3).

Table 3: Aspects of relationship quality, loyalty and relationship commitment

Norm/Behaviour	Description	Composite statements
Relationship Quality	The producers' perception of how well their relationships fulfil the expectations, predictions, goals and desires of the customer (Gyau and Spiller, 2007; Batt, 2003).	• My buyer is quick to handle my complaints • My buyer cares for my welfare • My buyer treats me fairly and equitably • My buyer often meets my expectations • I trust my buyer • I feel satisfied doing business with my buyer • My buyer's promises are reliable
Loyalty	The producers' decision to maintain and remain their exchanges with the same buyer (Rauyruen and Miller, 2007).	• I will be happy to recommend my buyer to other dairy producers • I will ask other dairy producers to seek assistance from my buyer • I will continue to do more business with my current buyer in the next few years • If I have an alternative buyer, I will remain with this buyer • My current buyer has given me the best technical support and assistance • My current buyer is much more convenient than other buyers
Relationship commitment	The exchange partners' believe that the relationship is so important as to warrant maximum efforts to maintain it (Morgan and Hunt, 1994).	• I feel committed to my buyer • My relationship is something that I am very committed to • I want to improve my relationship in the long-term • I want to maintain indefinitely our relationship

In all cases, five point likert-scale type questions 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, relationship quality, commitment and loyalty.

Statistical analyses and results

Path analysis

Partial Least Squares (PLS) Structural Equation Modelling (SEM) using the SmartPLS software 2.0 was used to test the model. The PLS is a "Soft modelling" technique iteratively estimating the latent variable parameters using the least squares method. In the soft modelling approach, two forms of variables, the latent and the manifest variables, are considered. Manifest variables that make no significant contributions to the respective latent variables are progressively removed and the analysis is repeated until all the manifest variables are significant.

Testing the measurement model

The fit of the measurement model was evaluated using the inner and the outer models.

Evaluating the outer model

The outer model was evaluated by examining individual item reliabilities and convergent validity of the model. The individual item reliabilities were examined through factor loadings on their respective constructs. Only items with factor loadings of at least 0.4 were considered significant and retained (Hair et al.,1998). The results are reported in Column C, Appendices 2a and 2b, ranging from 0.414 to 0.922. The composite reliability of the measurements assesses internal consistency (Werts et al., 1974). The usual homogeneity criteria is for the composite reliability greater than 0.7. Appendices 2a and 2b show that all the composite reliability indices for the constructs surpassed the recommended 0.7 (composite reliabilities ranged from 0.7458 to 0.8974).

Convergent validity assesses whether the constructs measure what they are purported to measure. The convergent validity was assessed by calculating the Average Variance Extracted (AVE), indicating whether the construct variance could be explained from the chosen indicators (Fornell and Lacker, 1981). The minimum recommended value is for each construct to be at least 0.5 (Baggozi and Yi, 1988), meaning that the indicators

account for at least 50% of the variance. All the AVE indices for the constructs surpassed the recommended 0.5.

Evaluation of the inner model

Discriminant validity was the first criterion used to evaluate the inner model, meaning every construct is significantly different from the others. A loading and cross loading matrix was obtained. The loadings are the Pearson correlation coefficients to own constructs. The cross loadings are the Pearson correlation coefficients of indicators to other constructs. All loadings should be higher than the cross loadings. This is shown in bold letters in Appendix 3.

Another criterion for measuring the discriminant validity is that the square root of the AVE should be higher than the correlation between the construct and the other constructs (Chin, 2001). This is shown in Appendix 4. The diagonal displays the AVE square roots. This test is the Fornel-Larcker test (Fornell and Lacker, 1981). Bagozzi (1994) suggests that the correlations between the different constructs in the model must be smaller than 0.8. This was supported by the results displayed in Appendix 4.

The structural model

To evaluate the hypotheses, the R^2 and the significance of the path coefficients were used. Table 4 shows the standardized path coefficients. The R^2 measures the construct variance explained by the model. A good model fit exists when the R^2 is high. The R^2 for the loyalty and the relationship commitment were 0.527 and 0.274 respectively. The R^2 for relationship quality was 0.478. These indicate that the model provides sufficiently good fit for the latent constructs.

The standardised path coefficients allow us to analyse the degree of accomplishment of the hypotheses. The significance of the structural coefficients was estimated based on the bootstrapping method (Elfron and Gong, 1983). Standard errors of parameters were computed on the basis of 1000 bootstrapping runs. Based on this criterion, we accepted six out of the eight hypotheses that were formulated as illustrated in Table 4.

Table 4: Results of the structural model

A	B	C	D	E
Hypotheses	Constructs	Expected sign	Beta coefficients(b)	Accepted/ Rejected
H1a	RQ→Commitment	+	0.524***	Accepted
H1b	RQ→Loyalty	+	0.569***	Accepted
H2	Dependency→RQ	+	0.087	Rejected
H3	Mutual Goal→RQ	+	0.326***	Accepted
H4	Communication→RQ	+	0.276***	Accepted
H5	Power→RQ	-	0.054	Rejected
H6	PS→RQ	+	0.216**	Accepted
H7	PS→Loyalty	+	0.271***	Accepted

Discussion

The purpose of this study was to explore the nature of long-term relationships between Malaysia's dairy producers and their buyers. Our conceptual model suggested that certain relational variables including communication and mutual goals could enhance or impede the ability of the producers to stay in LTR with buyers.

In this research, quality relationship consisted of statements that related to buyer ability to handle producers' complaints adequately, buyer concerns about producers' welfare, being fair and meeting producers' expectations. It also related to how the buyer kept his/her promises to the producer. The results of the statistical analysis indicated that whereas, communication, mutual goals and price satisfaction influenced relationship quality, power exploitation and dependency did not influence relationship quality. In addition, price satisfaction had a positive influence on producers' loyalty.

The results indicate that producers' satisfaction with prices received influenced their perception of the quality of their relationship as well as their willingness to remain loyal to

the buyers. Price satisfaction measures used in this study were a composite measure of price fairness and price quality ratio, implying that producers will be satisfied if the milk grading system is transparent and fair. Producers are more likely to be attracted to buyers who offer reasonable milk prices. Malaysia's dairy farmers consider the actual price they receive, and they make comparisons in terms of price fairness and price quality ratio. Matzler et al. (2007) argue that when customers feel that a given price is fair and favourable, they are more likely to obtain satisfaction with the offer and hence with the buyer. This implies that in Malaysia's dairy supply chain, satisfaction is influenced by the milk price quality ratio, price transparency and relative price offered by any buyer.

In this study, communication played a vital role in improving the relationships between the buyers and the sellers. Any misunderstanding and misinterpretation caused by the lack of communication between exchange partners. In reality, producers as the seller not only communicated with the buyers but also between them. Much formal and informal information was shared during that time such as the price offered by the same buyer to different producers, the portions of milk bought by the buyers and also the formula used for milk quality. This information if not shared by the buyers with the sellers can be misinterpreted by sellers. Effective supply chains share information among partners rather than worry about knowledge expropriation (Spekman et al., 1998). Therefore, by practising timely communication, problems can be solved adequately and properly which in turn improves the relationship along the chain (Anderson and Narus, 1990).

Mutual goals were significant in this research. Processors required a constant supply of fresh milk, providing an incentive for both parties to work cooperatively. Producers looked for buyers who had a sense of mutuality in the business, encouraging both parties to agree on what could be achieved and what was expected of them in the relationship. The outcomes further showed that mutual goals were crucial in developing relationship quality and promoted sustainable relationships (Fischer and Hartmann, 2010). Spekman et al.,(1998) explain that "competitive success depends on the entire supply chain moving in unison, sharing similar goals and objectives" (Spekman et al., 1998, p.66).

In the case of Malaysia's dairy industry, frequent and timely communication with mutual objectives increases the likelihood for both partners to build relationship quality and to be in collaboration. Increasing quality relationships not only benefits both the buyers and the sellers but also the consumers. All along the chain, close relationships between producers and milk buyers secured constant milk supplies with acceptable milk quality and reasonable milk prices.

The results of this study show that relationship quality, measured by the level of satisfaction and trust, encouraged long-term relationships. The outcome of a positive relationship between RQ and LTR constructs made up of commitment and loyalty indicated that producers were more likely to stay in relationships with their buyers if they perceived them to be trustworthy and providing favourable and satisfying business opportunities. High levels of perceived trust and satisfaction are likely to reduce transaction costs of the producers in terms of searching, monitoring and switching costs. This seems likely to lead to a reduction in the overall cost to producers and consequently, improve performance. Since dairy producers are profit maximizers, they are more likely to remain with a buyer who can help to improve their performance and profitability. The presence of trust and satisfaction also indicates producers' commitment to the buyers. Committed partners will give maximum effort to sustaining the relationships by providing adequate resources, sharing important information and promoting mutual goals of the supply chain (Morgan and Hunt, 1994; Spekman et al., 1998).

Conclusions and implications

The study results have implications for Malaysia's supply chain actors. Firstly, the analysis suggests processors can enhance the consistency and reliability of fresh milk supplies by increasing communication, developing mutual goals and seeking a greater overall understanding of their producers. These relational norms are likely to result in better relationship quality outcomes, enabling producers to become more committed and loyal. One consequence is reduced incentives for producers to switch buyers. This new stability should provide opportunities for buyers to plan their input supplies and reduce costs associated with searching for alternative producers. In addition, a committed and loyal producer reduces the risk of interrupted supplies.

Secondly, producers were found to be price sensitive, reacting to both reasonable milk prices and milk grading standards. This indicates that producers will engage in LTR if they are satisfied with the price. Buyers need to understand the pricing points that generate producer satisfaction. This process involves making the milk grading system more transparent to producers. At present, only informal testing is done without proper laboratory testing. Changing the testing system is likely to increase the level of confidence in the grades assigned to the milk and their corresponding prices.

The research presented here suggests some limitations. Firstly, a cross-sectional study is limited in its ability to study concepts such as long-term relationships involving multiple

actors over time. Essentially, the attitudes of producers towards relationships change with time. Therefore capturing time series data would provide a better insight into this aspect of relationship building. Secondly, our data is also based on single sided interviews with the dairy producers, and therefore, is potentially subject to hindsight and other biases. A triangulation study between producers and buyers should be conducted to capture better insight and improve the research framework. Finally, in this study price satisfaction is conceptualised as a unidimensional variable. Future research should consider the various dimensions of price satisfaction as a separate construct and evaluate the impact on relationship quality.

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Appendix 1: Total Model Overview

Overview						
	Cronbachs Alpha	Composite Reliability	AVE	R Square	Communality	Redundancy
Communication	0.7042	0.8183	0.5319	0	0.5319	0
Dependency	0.5605	0.7458	0.5106	0	0.5106	0
Mutual Goals	0.659	0.7722	0.5351	0	0.5351	0
Power Exploitation	0.589	0.7634	0.6186	0	0.6186	0
Price Satisfaction	0.8284	0.8974	0.7447	0	0.7447	0
Commitment	0.7933	0.8575	0.5471	0.2744	0.5471	0.1477
Loyalty	0.8082	0.8741	0.6348	0.5274	0.6348	0.1275
Relationship quality	0.8418	0.8807	0.5137	0.478	0.5137	0.1277

Appendix 2a: Relational Variables and Price Satisfaction

A	B	C	D	E	F
	Variables and Indicators	**Factor loading**	**CRA**	**CR**	**AVE**
	Communication		0.704	0.818	0.532
d14	You and your buyer frequently discuss each other's expectations	0.789			
d15	We share information regularly with one another	0.769			
d 9	I have no problem communicating with my buyer	0.608			
d 3	My buyer keeps me informed regularly	0.737			
	Power Exploitation		0.589	0.763	0.619
d16	My main buyer controls all the production information	0.842			
d4	My buyer has all the power over my dairy production	0.727			
	Mutual Goals		0.659	0.772	0.535
d10	My buyer and I always discuss and review our business objectives	0.847			
d13	We (producer and buyer) have mutual interest in doing this business	0.606			
d18	I and my buyer share similar goals	0.721			
	Dependency		0.561	0.746	0.511
d6	I have to always rely on my buyer	0.922			
d12	I have no other alternative to my buyer	0.414			
	Price Satisfaction		0.828	0.897	0.745
f4	I agree with the milk price and grading system	0.885			
f12	The buyer offers me a fair and reasonable milk price	0.868			
f11	I get a good price-quality ratio	0.835			

Appendix 2b: Relationship quality, loyalty and commitment

	Variables and Indicators	Factor loading	CRA	CR	AVE
	Relationship Quality		0.8418	0.8807	0.5137
b1	My buyer's promises are reliable	0.754			
b2	My buyer often meets my expectations	0.753			
b8	My buyer treats me fairly and equitably	0.712			
b5	I feel satisfied doing business with my buyer	0.722			
b4	I can trust my buyer	0.658			
b13	My buyer cares for my welfare	0.714			
b14	My buyer is quick to handle my complaints	0.697			
	Loyalty		0.8082	0.8742	0.6349
e1	I will be happy to recommend my processor to other dairy buyers	0.78			
e2	I will ask other dairy producers to seek assistance from my buyer	0.756			
e9	I will continue to do more business with my current buyer in the next few years	0.818			
f7	If I have another alternative buyer, I will remain with this buyer	0.831			
	Relationship commitment		0.7737	0.8542	0.5944
b9	I want to improve my relationship in the long-term	0.716			
b6	I want to maintain indefinitely our relationship	0.763			
b15	I feel committed to my buyer	0.764			
b12	Our relationship is something that we are very committed to	0.788			

Appendix 3: Cross Loadings

Items	Communication	Dependency	Mutual Goal	Power Exploit	Price Satisfaction	Commitment	Loyalty	Relationship quality
B12	0.4218	0.1074	0.4519	0.0725	0.1302	**0.7885**	0.4059	0.4441
B13	0.4716	0.2411	0.4722	0.303	0.2615	0.3085	0.5219	**0.7243**
B14	0.3564	0.2137	0.3868	0.1568	0.2176	0.4311	0.5376	**0.6968**
B15	0.4678	0.1309	0.4452	0.0279	0.2156	0.7644	0.454	0.4098
B1	0.483	0.1349	0.4645	0.0921	0.3164	0.3959	0.5338	**0.7541**
B2	0.422	0.186	0.4403	0.1504	0.316	0.4127	0.4578	**0.7532**
B3	0.3258	0.0678	0.2761	-0.0157	0.1087	0.6597	0.3932	0.292
B4	0.4072	0.1075	0.4673	0.0354	0.3988	0.2977	0.4446	**0.6579**
B5	0.3604	0.084	0.3643	0.163	0.262	0.4761	0.5281	**0.7143**
B6	0.397	-0.0048	0.4911	-0.0251	0.1218	0.7628	0.3898	0.4255
B8	0.4448	0.0968	0.3745	0.2123	0.3487	0.3037	0.3932	**0.7121**
B9	0.3839	0.1971	0.4252	0.0324	0.0767	0.7159	0.3993	0.3363
D10	0.5617	0.1207	**0.8473**	0.1398	0.2755	0.5129	0.3408	0.5189
D12	0.1222	0.4143	0.1068	0.2822	0.1191	-0.0334	0.1169	0.0849
D13	0.2855	-0.03	0.6064	0.1313	0.1714	0.3401	0.3581	0.3423
D14	**0.7893**	0.1703	0.6107	0.2057	0.3533	0.5028	0.4665	0.4061
D15	**0.7694**	0.1159	0.5544	0.0987	0.2226	0.4429	0.4187	0.3866
D16	0.2038	0.2633	0.2127	0.8421	0.0837	0.0326	0.1055	0.1946
D18	0.5555	0.2126	0.7209	0.1534	0.181	0.3873	0.3491	0.4228
D3	**0.7371**	0.0323	0.448	0.072	0.1623	0.3378	0.3552	0.3808
D4	0.0879	0.4067	0.0737	0.7268	0.0317	0.0082	0.0054	0.1528
D6	0.0938	0.9217	0.1186	0.3327	0.0482	0.1575	0.1276	0.1992
D9	0.6078	0.0667	0.3103	0.1664	0.2676	0.2984	0.3947	0.4974
E1	0.4593	0.1171	0.35	-0.0048	0.3027	0.5414	**0.7798**	0.5223
E2	0.4928	0.154	0.435	0.1758	0.4564	0.3554	**0.756**	0.5682
E9	0.4392	0.1385	0.4102	0.0992	0.4085	0.508	**0.8183**	0.5877
F11	0.2888	0.0643	0.2626	0.1091	**0.8852**	0.1244	0.4371	0.4157
F12	0.2947	0.0024	0.2011	0.0669	**0.8681**	0.1591	0.457	0.3373
F4	0.3344	0.1713	0.2943	0.0185	**0.8349**	0.1854	0.4293	0.3336
F7	0.4166	0.1002	0.288	-0.0444	0.4443	0.3569	**0.8307**	0.4889

Appendix 4: Latent variables correlations

	Communication	Dependency	Mutual Goals	PE	PS	Commitment	Loyalty	Relationship Quality
Communication	1	0	0	0	0	0	0	0
Dependency	0.1328	1	0	0	0	0	0	0
Mutual Goals	0.6555	0.1494	1	0	0	0	0	0
PE	0.1931	0.4124	0.1915	1	0	0	0	0
PS	0.3534	0.0901	0.2922	0.077	1	0	0	0
Commitment	0.5433	0.1304	0.5739	0.028	0.18	1	0	0
Loyalty	0.5686	0.1616	0.4696	0.078	0.511	0.5496	1	0
Rel. quality	0.5885	0.2143	0.5937	0.223	0.421	0.5239	0.6833	1

CHAPTER 4: Building producer loyalty in Malaysia's fresh milk supply chain[2]

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Statement of Authorship

Bonaventure Boniface developed the survey questionnaire, collected and analysed the data, developed the conceptual model and wrote the article. I am also the corresponding author.

_____

Signature Date 16th June 2011

Amos Gyau supervised the conceptual model and helped interpret the data, and edits the text of the article. Gives consent to Bonaventure to present this article for the Doctor of Philosophy examination.

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Signature Date 2nd July 2011

Randy Stringer supervised the development of this work, and edits the text of the article and gives consent to Bonaventure to present this article for the Doctor of Philosophy examination.

_____

Signature Date 4th July 2011

Wendy Umberger reviewed and commented on the final draft of the article and gives consent to Bonaventure to present this article for the Doctor of Philosophy examination.

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Signature Date 17th june 2011

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 paper's implications. The final section presents a summary, describing the study's 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

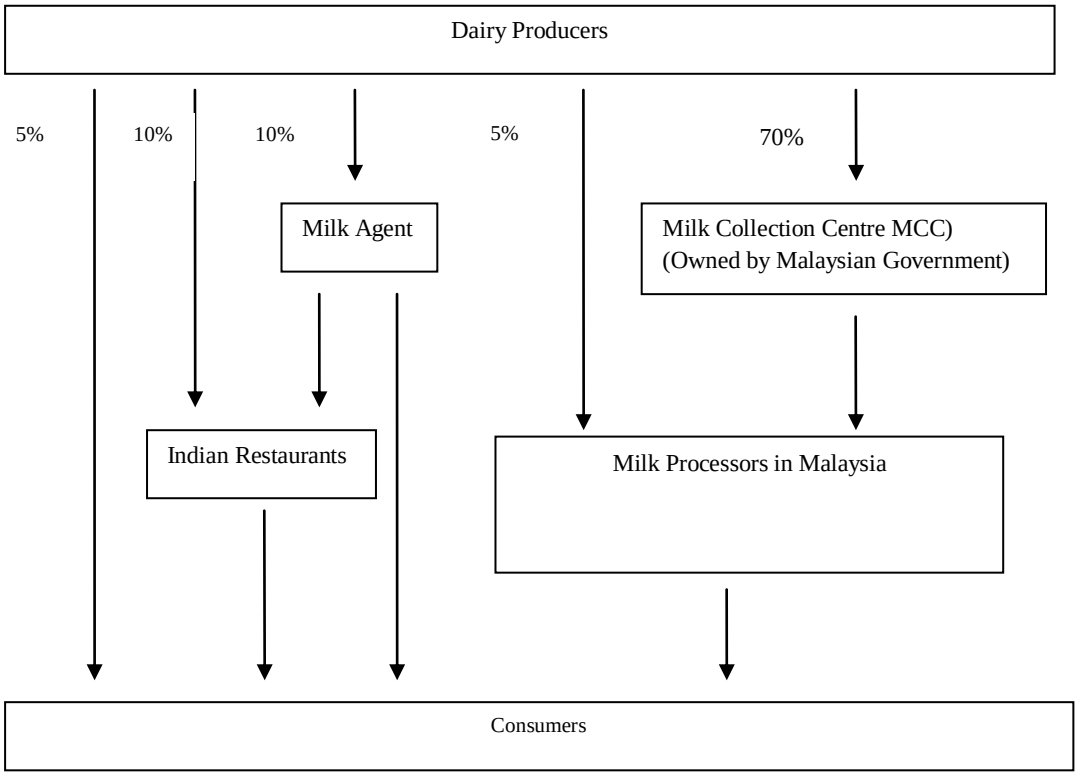
Fresh Milk	2004	2005	2006R	2007R	2008P
Production (mil.litres)	38.77	41.10	45.45	51.07	56.49
Consumption (mil.litres)	1,300.47	895.06	975.81	1,067.13	1,155.53
Self-sufficiency (%)	2.98	4.59	4.66	4.79	4.89

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).

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.

Figure 1: Malaysian fresh milk supply chains

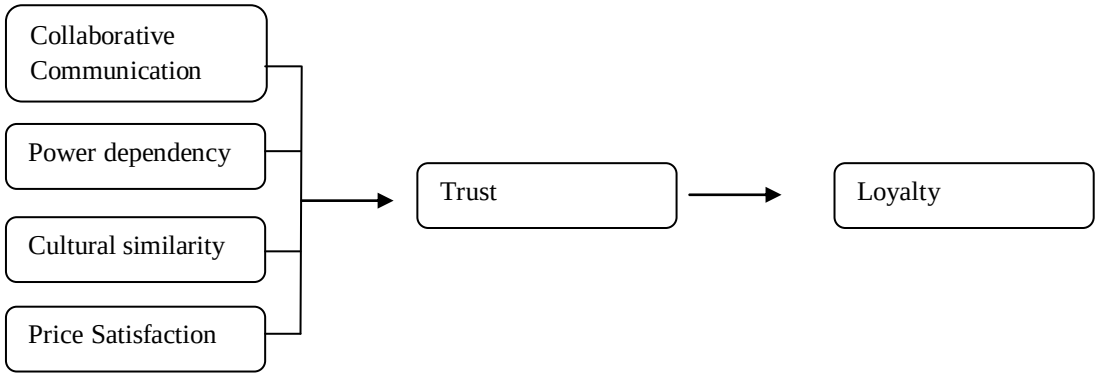


Source: Research Survey, 2009

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 customer's 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 partner's 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 producer's trust of the competence-goodwill of their buyers.

H3b: Collaborative communication has a positive influence on the dairy producer's 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 A's 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^2) 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^2/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 model's 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 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 : Cronbach's 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 : Cronbach's 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, Cronbach's 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, Cronbach's 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, Cronbach's 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, Cronbach's 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, Cronbach's 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

CHAPTER 5: Linking price satisfaction and business performance in Malaysia's dairy industry[3]

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Statement of Authorship

Bonaventure Boniface developed the survey questionnaire, collected and analysed the data, developed the conceptual model and wrote the article. I am also the corresponding author.

_____

Signature Date 16th June 2011

Amos Gyau supervised the conceptual model and helped interpret the data, and edits the text of the article. Gives consent to Bonaventure to present this article for the Doctor of Philosophy examination.

_____

Signature Date 2nd July 2011

Randy Stringer supervised the development of this work, edits the text of the article, reviewed the final draft of the manuscript and gives consent to Bonaventure to present this article for the Doctor of Philosophy examination.

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Signature Date 4th July 2011

Abstract:

Purpose- Price satisfaction influences competitive performance and business success. Strong price satisfaction enhances and sustains high quality business relationships, leading to improved profits for chain participants. This paper explores the dimensions of price satisfaction in the context of the Malaysian dairy industry. The aim is to determine which dimensions of price satisfaction affect relationship performance between dairy producers and milk buyers.

Design/Method/Approach- Eight hypotheses are tested using partial least square methods on survey results from 133 dairy producers in Malaysia.

Findings- The study results suggest that relative price; price-quality ratio and price fairness influence producers' loyalty and improved business relationship performance.

Implication- To achieve long-term, sustainable business relationships involving consistent high quality supplies, milk buyers need to understand and capture the price satisfaction dimensions.

Originality/value- The study provides insights into the important linkages between price satisfaction and business performance in an agriculture industry.

Keywords: business-to-business, price satisfaction, business performance, dairy Industry, Malaysia

Introduction

Much of the relationship marketing research focusing on agricultural industries emphasize the benefits of long-term, sustainable business relationships between exchange partners (Batt, 2003; Lu *et al.,* 2008; Reynolds *et al.,* 2009). This research reveals that long term relationships stimulate firm and chain benefits, including improved partner commitment (Gyau and Spiller, 2008), information sharing (Batt, 2003) and collaborative innovation (Soosay *et al.,* 2008). Overtime, stronger relationships can lead to lower transaction costs (Williamson, 1979), reduced market uncertainties (Heidi and Stump, 1995) and improved business performance (O'Toole and Donaldson, 2000). Batt (2004) argues that while a long-term business relationship may reduce some market uncertainties, it may not be enough to provide price certainty. As a result, suppliers may abandon their exchange partner from time to time to obtain a better and more reasonable price.

Like many other Asian countries, Malaysia's dairy market is expanding as a result of increasing population growth, rapid income growth and more attention to dietary health (Dong, 2006). The emerging dairy consumption opportunities presented by these demand-related growth factors are leading processors to explore the role of producer incentives that go beyond traditional production and product flow logistics. In particular, milk buyers seek information on how they can build stronger and mutually beneficial relationships with their suppliers to secure regular and uninterrupted milk supplies (Boniface, 2011). Capturing dairy producer's price satisfaction can play an important role for processors working within an ever more competitive dairy market.

Many studies recognise the importance of price satisfaction in the development and maintenance of long-term relationships between exchange partners. In business-to-consumer (B2C) relationships, price satisfaction plays a significant role in competitive strategies, influencing customer's purchase intentions (Campbell, 1999; Munnukka, 2008) and loyalty (Choi and Mattila, 2009), which may eventually lead to business profitability and sustainability (Diller, 2000a; Kotler *et al.,* 2006; Boniface *et al.,* 2010).

Studies tend to operationalize price satisfaction as a unidimensional construct (Campbell, 1999; Diller, 2000b; Gyau and Spiller, 2010; Munnukka, 2008). Multi-dimensional analysis of the price satisfaction construct especially from the business-to-business (B2B) perspective is given much less attention. A better understanding of the various dimensions

of price satisfaction and the role each dimension plays in influencing chain performance in the B2B relationship are potentially important for managerial decision making. This paper attempts to contribute to this literature by analysing the multi dimensional nature of price satisfaction in the Malaysian dairy industry and its influence business relationship performance.

The remaining sections of the paper are organised as follows. To provide context, the next section presents a brief overview of the Malaysian dairy industry. Next, the paper discusses the conceptual framework and hypotheses followed by a report of the results from Partial Least Squares (PLS) statistical modelling to test the model. The final sections discuss the results and present the conclusions.

The Malaysian dairy market

The dairy industry in Malaysia is projected to expand rapidly due to increasing milk demand as a result of higher incomes, urbanization and population growth (Dong, 2006). These projections suggest that by 2014, dairy product consumption will increase more than 30%. For a number of reasons, domestic production is not coping well with the rapidly increasing demand. Milk marketing in Malaysia is dominated by a state owned enterprise, the Milk Collecting Centre (MCC), under the supervision of the Department of Veterinary Services, Malaysia. The Government provides centralised milk collection and distribution facilities, some rural credit, subsidies for the purchase of dairy cows and extension-service support for animal nutrition and hygiene.

Producers sell their milk to MCC at a predetermined price based on a grading system. This contract does not restrict the producers from selling their milk to other buyers. Consequently, there are multiple markets for the producers. Some producers sell their milk to private traders and other producers sell directly to restaurants or processing firms, including Dutch Lady Milk Industries Berhad, Susu Lembu Asli and Sabah International Dairies (Boniface *et al.,* 2010).

There are wide differences in the prices received by farmers depending upon whom they sell to. For instance, during the period of the authors field work in June and July 2009, the farm gate price that the farmers reported receiving from the MCC and factories ranged from Malaysian Ringgit (MYR) 1.80 to MYR 2.50 per litre. The price range for

individuals, agents and restaurants lies between MYR 2.20 to MYR 4.00. In the next section, we develop the conceptual framework.

Conceptual framework

The premise of the conceptual model (illustrated in Figure 1) is that price satisfaction is a multi-dimensional construct made up of five components: price reliability, relative price, price-quality ratio, price fairness and price transparency. We hypothesize that each of these dimensions influences supplier loyalty, effecting the financial and non-financial relationship performance of the dairy farmers.

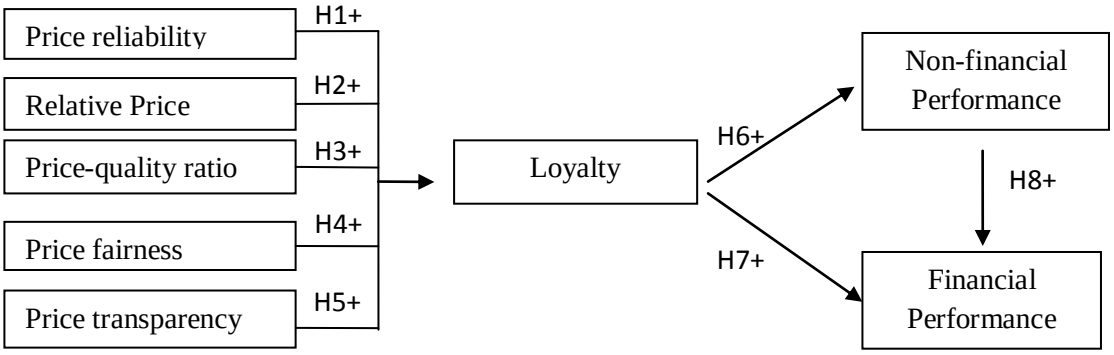

Figure 1: Model of price satisfaction, supplier loyalty and relationship performance

Loyalty

In the B2C relationships, customer loyalty plays a significant role in fostering profitability and business sustainability (Diller, 2000a). For the purpose of this study, we follow three established categories: behavioural loyalty (Jacoby and Chestnut, 1978), attitudinal loyalty (Bennett and Rundle-Thiele, 2002) and composite loyalty (Baldinger and Rubinson, 1996; Rauyruen and 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. Baldinger and Rubinson (1996) suggest that the behavioural pattern of repurchasing the same brand influences the underlying attitudes toward that brand. Therefore, attitudinal loyalty relates to a customer's 'attitudinal' preferences and commitment towards a brand (Bennett and Rundle-Thiele, 2002). Some researchers argue that customer loyalty cannot be explained by looking only at the customer's behaviour in isolation of the customer's 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 purchases or uses continuously the same product and actually recommends it to others (Baldinger and Rubinson, 1996; Rauyruen and Miller, 2007). Customer satisfaction is related to loyalty. Essentially, customers over time are loyal to the same company provided they are satisfied with the product and service (Diller, 2000a). Customer loyalty relates to brand loyalty, implying the strength for a particular product or service. However, in the context of agricultural producers studied here, loyalty implies the strength of the preferences for a particular buyer. Buyer characteristics, such as keeping promises, making payments on time and communicating regularly can contribute to developing a supplier loyalty to a particular buyer.

Although the idea of loyalty in business relationships is beneficial in buyer-seller relationships, most literature concentrate on buyer behaviour. 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.

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 (Boniface *et al.*,2010). To explain the loyalty of suppliers to their buyers, this study applies the characteristics of customer loyalty to that of supplier loyalty within the Malaysian dairy industry to understand the motivation of dairy producers to continuously sell milk and engage in long-term relationships with their buyers. Thus, by taking a mirror reflection of the definition of customer loyalty, supplier loyalty which is the focus of this article will be defined as "suppliers" willingness and desire to continue to supply to a particular buyer and recommends that buyer to other suppliers". This is necessary in order to ensure that a buyer whom sellers are loyal to can obtain continuous and uninterrupted milk supply

Price satisfaction and loyalty

Price satisfaction refers to the psychological result of a difference between price expectations and price perceptions (Gyau *et al.*, 2011; Matzler *et al.*,2006). In any market exchange relationships, price is a dominant factor. Maztler *et al.*, (2006, p.217) state that 'the central role of price as a purchasing determinant as well as in post-purchasing processes is well recognized.' Therefore, price satisfaction influences a consumers' buying intention (Campbell, 1999; Diller, 2000b; Munnukka, 2008) and eventually creates a loyal customer in the long run (Diller, 2000a; Espejel *et al.*, 2008). Capturing additional customer satisfaction through price related factors is often considered an important way to promote sustainable business relationships (Anderson and Narus, 1990; Geyskens *et al.*, 1999).

Understanding price satisfaction as a multi-dimensional construct provides a better understanding of the customers' satisfaction in price (Matzler *et al.*, 2007). Geyskens *et al.* (1999) find that satisfaction can be achieved through economic and non-economic factors because, offering a better and reasonable price, fulfils the economic reward while the feelings of being appreciated and perceived fairness complete the non-economic satisfaction (Geyskens *et al.*, 1999).

In searching for a better price, clients, consumers and costumers look for a clear, comprehensive, current and effortless overview of a company's quoted prices (Diller, 1997). Buyers tend to be satisfied when honest and complete price information is provided (Matzler *et al.*, 2007). Most price formula considers factors such as quality, quantity supplied, geographical location, length of relationship and the nature of contracts (Schroeder *et al.*, 1998). Suppliers are more likely to be satisfied if they are provided with information on how buyers determine the price that will be paid for their product. Thus, higher levels of price transparency may influences supplier loyalty which eventually prolongs business relationship (Somogyi and Gyau, 2009; Boniface *et al.*, 2010).

Price reliability includes the notion of price confidence, consistency and favourability (Diller, 1997). Matzler *et al.* (2006, p. 221) explain that "Customers will perceive high price reliability if there are no hidden costs, if prices do not change unexpectedly. If prices change, customers should be informed properly and in a timely manner to build trust and maintain a long-term relationship." From the suppliers perspective and in the context of

Malaysia's dairy industry, offering reliable prices may encourage sustainable business relationship between exchange partners (Boniface, 2011).

Relative price exists when consumers start to compare the price of the product or services with that of the competitor (Matzler *et al.*, 2007). The act of comparing prices may influence perceptions of price (Compeau and Grewal, 1994). If consumers consider the price offered is better than that of the competitor, they will be satisfied, feeling they are being treated fairly.

Research suggests that offering fair prices leads to consumer satisfaction (Campbell, 1999; Matzler *et al.,* 2007; Choi and Mattila, 2009), extending B2B relationships (Anderson and Narus, 1990; Batt, 2003; Reynolds *et al.,* 2009). Price fairness involves comparing prices (Somogyi and Gyau, 2009). Suppliers feel unfairly treated if they find that the same milk buyer offered different prices to different suppliers. Price quality-ratio relates to reasonable price value and quality. If perceived quality exceeds perceived costs, customer value is high and vice versa (Matzler *et al.*, 2007). In the B2B relationships, providing a good price-quality ratio may improve supplier's satisfaction and loyalty (Diller, 2000a).

In the long run, loyalty may improve a firm's competitiveness and profitability (Rowley, 2005). It encourages word-of-mouth marketing, lowering marketing costs (Dick and Basu, 1994). Similarly, capturing behavioural and attitudinal loyalty stimulates long-term relationships with exchange partners (Rauyruen and Miller, 2007) and enhances sustainable business environment (Caceres and Paparoidamis, 2005). Thus, price satisfaction may influence customer loyalty (Choi and Mattila, 2009).
Based on the above discussion we propose that:

H1: Price reliability has a positive influence on the supplier loyalty
H2: Relative price has a positive influence on the supplier loyalty
H3: Price quality has a positive influence on the supplier loyalty
H4: Price fairness has a positive influence on the supplier loyalty
H5: Price transparency has a positive influence on the supplier loyalty

Supplier loyalty and business relationship performance

O'Toole and Donaldson (2000) found that business relationship performance can be categorized into financial and non-financial business performance. They conceptualized that financial performance closely relates to economic rewards such as return on investment, cost sharing and long-term profitability. Non-financial performance is the outcome of mutual interest, trust and satisfaction in relationships. This paper proposes that creating supplier price satisfaction leads to supplier loyalty (Espejel *et al.*, 2008) and by gaining a supplier loyalty leads to improvements in both financial and non-financial relationship performance (O'Toole and Donaldson, 2000). Therefore,

H6: Supplier loyalty has a positive influence on the non-financial performance

H7: Supplier loyalty has a positive influence on the financial performance

Maintaining close and personal relationships with exchange partners is a major factor in developing better non-financial performance. The close and personal relationships between exchange partners promote higher business commitment and indirectly increase economic rewards (Boniface *et al.*, 2011). Therefore, promoting non-financial performance such as flexibility and joint action in the B2B setting may influence supplier financial performance such as higher profitability and economic return on investment (O'Toole and Donaldson, 2000). It is hypothesized that

H8: Non-Financial performance has a positive influence on the financial performance

Methodology and survey design

This study is based on surveys of 133 dairy producers carried out during June and July 2009. The methods for selecting the households and designing the questionnaire included several stages. The first stage involved gathering information through a literature review, field visits and key informant interviews with producers, traders, extension agents, veterinarians, MCC staff and government department heads and staff working for the three large private milk processors, Dutch Lady, Susu Lembu Asli and the Sabah Dairy Association. These interviews provided the context for understanding many of the industry trends and issues, how supply chains operate, the size and location of producers across Malaysia, the dynamics of buyer seller relationships and related socioeconomic and industry information to explore in the questionnaire.

In the next stage, four states, Johor, Melaka and Selangor (located on Peninsular Malaysia) and Sabah, were purposively selected for this study. Based on the key informant interviews and secondary data provided by the Department of Veterinary Service, these four states include: (i) a wide range of small to very large dairy producers; (ii) a variety of marketing channels, biosecurity chain logistics and quality requirements; and (iii) more than more than half of all of the country's dairy producers (297 out of a total of 550). The other dairy producing states are dominated by small scale producers with less than 10 cows per farm. The dairy household selection involved two segments. One segment includes the small and medium scale producers. The other segment includes producers with more than100 cows.

Data provided by the 3 private dairy companies and the Department of Veterinary Services for the fours states contained 297 total producers with 54 producers larger than 100 cows. The data was collected by interviewing milk producers. The list of the producers was obtained from MCCs at respective states. In order to obtain a representative sample, a cluster random sampling procedure was used. The producers were initially clustered into 4 groups based on size of the firm. A simple random sampling was then used to select respondents from each of the clusters. In total 133 producers were interviewed made up of 57 small, 25 semi-commercial, 31 commercial and 20 large scale producers. These represented 42.9%, 18.8%, 23.3% and 15% respectively for small, semi-commercial, commercial and large scale producers.

All interviews were face to face, lasting around one hour. The questionnaire was pre-tested with 3 dairy supply chain specialists and 10 dairy farmers in Malaysia with participants asked to provide feedback on the length, content, format, comprehensibility and accuracy of the survey instrument. After each stage, the questionnaire was modified to incorporate feedback. To ensure consistency, farmers were asked to evaluate the relationship with their main buyer, defined as the buyer who purchases largest quantity of their fresh milk.

Respondent description

The majority of respondents were men, with an average age of 45 years and 13 years of experience in the dairy farming business. The herd size averaged 85 cows, with the largest farm having 2455 cows. The average milk yield (per day) is 10 kg per cow. The highest milk yield is 28 kg and the lowest is 2 kg. The breeds of cows are diverse, ranging from pure breed Holstein- Friesian and Jersey to mixed breeds such as Sahiwal-Friesian crosses.

The respondents are predominantly small-scale producers. Most respondents (79%) obtained primary and secondary education while a few (4%) had tertiary education. The respondent profiles are presented in Table 1.

Table 1: Respondent profiles

Age (years)	*Numbers of producer*	*Percentage (%)*
19-30	13	9.8
31-40	36	27.1
41-50	47	35.3
51-60	28	21.1
61-70	9	6.8
Level of education		
Primary and secondary education	105	78.9
Diploma and certificate education	23	17.3
Tertiary education	5	3.8
Experience in the business (years)		
1-5	35	26.3
5-10	29	21.8
10-15	21	15.8
15-20	18	13.5
20-25	13	9.8
25-30	12	9.0
Farm size (number of cattle)		
Small-scale (1-30 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

Measurements scales

Measurements for price satisfaction dimensions, loyalty and relationship performance are operationalised as shown in Table 2

Table 2: Operationalisation of the variables

Price satisfaction dimensions	*Description*	*Statements*
Price Reliability	Price does not change unexpectedly and suppliers are informed timely (Matzler *et al.,* 2007).	• Milk price changes are communicated timely • My buyer keeps all promise regarding milk price • Milk price changes are communicated properly
Relative Price	Price of the offer compared to that of competitors' offers (Matzler *et al.,* 2007).	• Terms and condition of my buyer are better tailored to my needs than those of other buyers • I am convinced that my buyer is the best choice
Price Quality	The price receives from their buyer reflecting the quality of the product (Zeithaml, 1988).	• I get a good price-quality ratio • I have the impression that I know what I am paying for • I agree with the milk price and grading system
Price Fairness	Consumers gain satisfaction from a price of a product if they believe that the offered price is favourable and fair (Campbell, 1999; Diller, 2000).	• My buyer does not take advantage of me • My buyer always consistence with the same pricing formulas
Price Transparency	Clear, comprehensive, current and effortless overview about a companies quoted prices (Matzler *et al.,* 2007).	• My buyer milk price is clear, comprehensible and understandable • Milk price information is complete, correct and frank • Milk price information is understandable and comprehensive
Loyalty	The producer's decision to maintain and remain their exchanges with the same buyer (Dick and Basu, 1994; Rauyruen and Miller, 2007).	• I will be happy to recommend my processor to other dairy buyer • I will ask other dairy producer to seek assistance from my buyer • I will continue to do more business with my current buyer in the next few years • My current buyer is much more convenience than other buyers

Table 2 (continue) : Operationalisation of the variables

Price satisfaction dimensions	*Description*	*Statements*
Financial performance	Perceived business relationship performance by looking at the financial performance attributes (O'Toole and Donaldson, 2000; Gyau and Spiller, 2008)	• My relationship with the buyer has been a financial success • I have been able to achieve 100% of my goals by selling to my current buyer • I gain steady income and financial security from this • Return on investment is higher in this contract/relationship
Non-financial performance	Perceived business relationship performance by looking at the non-financial performance attributes (O'Toole and Donaldson, 2000; Gyau and Spiller, 2008)	• My buyer able to solve problem adequately • One of the main advantages of this contract/relationship is it stability • One of the main advantages of this contract/relationship is its flexibility • We are happy with this contract/relationship

In all cases, five point likert-scale type questions 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 price satisfaction, supplier loyalty and relationship performance

Statistical analyses and results

Path analysis

PLS is used to test the model presented in Figure 1. The Structural Equation Modeling (SEM) uses the SmartPLS software 2.0.1. The PLS is a "Soft modeling" technique which iteratively estimates the parameters of latent variables using the least squares method. The PLS was considered as the most appropriate modeling technique due its advantages[4] compared to other traditional structural equation techniques such as LISREL.

In the soft modeling approach, two forms of variables, the latent and the manifest variables are considered. Manifest variables that make no significant contributions to the respective latent variables are progressively removed and the analysis is repeated until all the manifest variables are significant.

[4] Detail discussion of the merits and demerits of PLS can be found in Fornell and Cha, 1994.

Testing the measurement model

The fit of the measurement model is evaluated using the inner and the outer models.

Evaluating the outer model

The outer model is evaluated by examining the individual item reliabilities and convergent validity of the model. The individual item reliabilities are examined through the factor loadings of the items on their respective constructs. Only items with factor loadings of at least 0.5 are considered significant and retained in the model (Hair *et al.*, 1998). The results are reported in Table 3 and range from 0.7099 to 0.9122. The internal consistency of the model was assessed by calculating the composite reliability of the measurements (Werts *et al.*, 1974). The usual homogeneity criteria is for the composite reliability to be greater than 0.7. Table 3 shows that all the composite reliability indices for the constructs surpass the recommended 0.7 (composite reliabilities range from 0.8058 to 0.8827).

Table 3: Variables and statistical results

Variables and indicators	***Factor loading***	***CRA***	***CR***	***AVE***
Price Reliability (PR)		0.6412	0.8058	0.5803
Milk price changes are communicated timely	0.7597			
My buyer keeps all promise regarding milk price	0.7621			
Milk price changes are communicated properly	0.7635			
Relative Price (RP)		0.5584	0.8170	0.6912
Terms and condition of my buyer are better tailored to my needs than those of other buyers	0.7861			
I am convinced that my buyer is the best choice	0.8743			
Price Quality Ratio (PQ)		0.8007	0.8827	0.7151
I get a good price-quality ratio	0.8349			
I have the impression that I know what I am paying for	0.8265			
I agree with the milk price and grading system	0.8747			
Price Fairness (PF)		0.6898	0.8629	0.7593
My buyer does not take advantage of me	0.9122			
My buyer always consistence with the same pricing formulas	0.8286			
Price Transparency (PT)		0.7205	0.8402	0.6369
My buyer milk price is clear, comprehensible and understandable	0.7689			
Milk price information is complete, correct and frank	0.8110			
Milk price information is understandable and comprehensive	0.8135			

Table 3 (continue): Variables and statistical results

Variables and indicators	*Factor loading*	*CRA*	*CR*	*AVE*
Loyalty		0.7663	0.8503	0.5870
My current buyer is much more convenience than other buyers	0.7269			
I will be happy to recommend my processor to other dairy buyer	0.7853			
I will ask other dairy producer to seek assistance from my buyer	0.7785			
I will continue to do more business with my current buyer in the next few years	0.7726			
Financial Performance (FP)		0.7981	0.8691	0.6253
My relationship with the buyer has been a financial success	0.7636			
I have been able to achieve 100% of my goals by selling to my current buyer	0.8270			
I gain steady income and financial security from this contract/relationship	0.8545			
Return on investment is higher in this contract/relationship	0.7099			
Non-financial Performance (NFP)		0.7717	0.8503	0.5870
My buyer able to solve problem adequately	0.7481			
One of the main advantages of this contract/relationship is it stability	0.7371			
One of the main advantages of this contract/relationship is its flexibility	0.8129			
We are happy with this contract/relationship	0.7644			

Convergent validity assesses whether or not constructs measure what is purported to measure. The convergent validity was assessed by calculating the Average Variance Extracted (AVE) which indicates whether the construct variance can be explained from the chosen indicators (Fornell and Lacker, 1981). The minimum recommended value for each construct is at least 0.5 (Baggozi and Yi, 1988) meaning that the indicators account for at least 50% of the variance. All the AVE indices for the constructs surpass the recommended 0.5.

Evaluation of the inner model

The first criterion used to evaluate the inner model is the discriminant validity, meaning that every construct is significantly different from the others. To analyse this, a loading and cross loading matrix was obtained. The loadings are the Pearson correlation coefficients to own constructs. The cross loadings are the Pearson correlation coefficients of indicators to other constructs. All loadings should be higher than the cross loadings as is the case. This is shown in bold letters in Appendix 1.

Another criterion for measuring the discriminant validity is that the square root of the AVE should be higher than the correlation between the construct and the other constructs (Chin 2001). This is shown in Appendix 2. The diagonal displays the AVE square roots. This test is the Fornel-Larcker test (Fornell and Lacker, 1981). Bagozzi (1994) suggests that the correlations between the different constructs in the model must be smaller than 0.8. This is supported based on the results displayed in Appendix 2.

The structural model

The R^2 and the significance of the path coefficients evaluate the hypotheses. Table 3 presents the standardized path coefficients. The R^2 measures the construct variance explained by the model. A good model fit exists when the R^2 is high. The R^2 for the non-financial performance and the financial performance are 0.3646 and 0.6320 respectively. The R^2 for loyalty is 0.4816. These indicate that the model provides sufficiently good fit for the latent constructs (see Appendix 3).

The standardised path coefficients analyses the degree of accomplishment of the hypotheses. The significant of the structural coefficients is estimated based on the bootstrapping method (Elfron and Gong, 1983). Standard errors of parameters were compute on the basis of 1000 bootstrapping runs. Based on this criterion, we accepted six out of the eight hypotheses that were formulated as illustrated in Table 4.

Table 4: Results of the structural model

Hypotheses	**Constructs**	**Expected sign**	**Beta coefficients**	**Accepted/ Rejected**
H1	PR →Loyalty	+	-0.088	Rejected
H2	RP →Loyalty	+	0.414***	Accepted
H3	PQ →Loyalty	+	0.192*	Accepted
H4	PF →Loyalty	+	0.210**	Accepted
H5	PT → Loyalty	+	0.081	Rejected
H6	Loyalty →NFP	+	0.602***	Accepted
H7	Loyalty →FP	+	0.462***	Accepted
H8	NFP→FP	+	0.488***	Accepted

*** significant at 0.01, ** significant at 0.05, * significant at 0.10

Discussion

As expected, relative price significantly influences supplier loyalty, likely resulting from suppliers comparing prices and services between buyers. Whereas some buyers offer high prices and buy low volume of milk, others like the MCC buys milk at slightly lower prices than the market price, but purchases high volumes of milk. Dairy producers consider how much they will obtain but also measure the price in relation to the quantity that can be sold to the buyers. For instance, in the qualitative stage of this research, one of the respondents stated, "no doubt they are paying less, but by 9.00 am all my work will be finished, I can go back to my other work life." Many suppliers prefer to sell all their milk in one day to one buyer even at lower prices so they can do other work activities such as attending to the dairy maintenance, buying animal feeds or doing other related business. Another respondent mentioned that, "I do not like temporary buyers even though they offer higher milk prices." Thus, relative price in terms of price quantity ratio as well as prices that can be obtained from other buyers have influence on supplier loyalty.

Secondly, price-quality ratio is found to influence supplier loyalty. In the context of the Malaysian dairy industry, this indicates that producers are interested in the quality grading system and hence, whether or not quality is considered when rewarding them. Considering quality may influence how they relate to the buyer. Thus, where a good grading system is used, farmers are more likely to be loyal and vice versa. In Malaysia, the biggest buyers like the MCC do milk quality tests test on site (eg., Methylene Blue dye Reduction) while other tests, like the Total Plate Count are done elsewhere due to lack of facilities and equipment in the milk collection centres. Milk price and grading are based on the TPC test result; the milk grade can be improved from grade D to A, by reducing the Total Plate Count levels from 0.50 to 0.20 M/ml, resulting in milk price increases of 25 percent (Moran, 2009 p.78). Such practises cause some milk suppliers to doubt whether their milk quality is best related to appropriate price. One of the respondents stated that, "If I have the choice, I would sell to Dutch Lady, we get more recognition. When other people know that I sell to Dutch Lady, I will be recognized."

Price fairness has a positive influence on loyalty. A result consistent with other research including Campbell (1999) and Choi and Mattila (2009) who postulate that, if customers perceive the price offer as reasonable and profitable, they will stay with the same retailer. In the dairy industry, milk suppliers tend to look for fair and reasonable prices. For

example, one of the respondents stated that, "I like to sell to milk agents because they come to my farm and collect my milk production while other buyers like MCC do not provide this kind of service." Most suppliers felt that by selling to milk agents they saved transportation cost, obtain reasonable and fair prices even though some buyers like MCC offers similar milk price.

Contrary to our hypothesis, price reliability and transparency do not to influence loyalty of the dairy farmers. This result is not consistent with a study by Matzler *et al*. (2007) who find all five price satisfaction dimensions influence purchasing intentions in the banking industry. One reason for this difference could be that the majority of the dairy farmers sell their milk to MCC at predetermined prices. In this contractual arrangement, price changes are not frequent but they are communicated in advance. A consistent price-quality formula may mean the price information is clear and understandable. High milk quality receives a higher price and vice versa. In this manner, milk prices are seen as reliable and transparent and not considered as such an important component influencing the supplier loyalty to a particular buyer.

The hypotheses linking supplier loyalty to either financial or non financial performance are supported. The findings are consistent with a study by Du and Wu (2008) who argue that loyalty improves business performance in the service industry. In this study, business performance based on both financial and non-financial performance are measured (O'Toole and Donaldson, 2000). The outcomes suggest that supplier loyalty eventually improves their financial performance through a continuous transaction with the same buyers and encourages joint action and problem solving between exchange partners through a series of interactions and long-term relationships with the same buyers.

Finally, non financial relationship performance is also found to have a positive influence on financial relationship performance indicating that the behavioural factors such as trust, satisfaction and commitment as perceived by the farmers may also influence their perception of economic rewards obtained from the suppliers. This supports the results of Gyau and Spiller (2008) who observed that non financial relationship performance has a positive influence on the financial relationship performance in the international fresh produce business between Ghana and Europe.

Conclusions

The purpose of this study is to examine the relationship between the dimensions of price satisfaction, supplier loyalty and business relationship performance in the Malaysian dairy industry. Previous agribusiness studies have not explored thoroughly the multi dimensional nature of the price satisfaction construct (Schulze *et al.,* 2006; 2010; Gyau *et al.,* 2011). The results presented here indicate that price satisfaction is a multi dimensional construct and that relative price, price-quality ratio and price fairness influence supplier loyalty and business relationship performance.

This study offers some managerial implications for milk buyers in Malaysia. First, the results indicate that price satisfaction is not only generated from the absolute prices that the farmers are paid but includes the psychological aspects, including of the whole exchange system relative prices, price quality and fairness. It is just not enough to pay high prices to suppliers in order to capture their loyalty. To ensure supplier loyalty, buyers need to understand and fulfil the psychological price aspects by making comparisons to what can be obtained from other buyers as well as the relationship between the price offered and quantity bought. This enables farmers to feel that the prices they receive are reasonable and fair, taking into consideration the quality of their milk. In this case, farmers may be more likely to stay in the relationship with the buyers even when the actual prices are not the highest. Secondly, by capturing price satisfaction, buyers indirectly avoid price asymmetry in relationships but practice mutual satisfaction in the exchange. In the food industry, high farm gate prices may affect consumers buying power which eventually influences the whole supply chain management. By enhancing price satisfaction in the supply chain, price asymmetry can be reduced and supplier's psychological gratification of the price which is given to them by the buyers can be enhanced.

Thirdly, buyers should not only have to concentrate on promoting financial performance but non-financial performance as well. Developing and building relationship quality with exchange partner prolong business relationships (Boniface *et al.,* 2009) and eventually improve financial perceptions and business performance (Gyau and Spiller, 2010). Against this background, it is recommended that milk buyers should consider relationship promotion as one of their performance objectives since it has the capacity to improve financial performance.

With regard to the findings stated here, there are some limitations that have to be taken into consideration in interpreting the results. First, we used a cross sectional data for the analysis and a cross-sectional study is limited in its ability to study concepts such as price satisfaction dimensions which involves multiple actors over time. Essentially, the attitudes of producers toward price satisfaction change with time (Campbell, 1999; Munnukka, 2008; Choi and Mattila, 2009). Therefore capturing time series data would provide a better insight into this aspect of relationship building. Finally, our data is also based on single sided interviews with the dairy producers, and therefore, potentially subject to hindsight and other biases. A triangulation study between producers and buyers should be conducted to capture a better insight and research framework.

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Appendix 1: Cross loadings

FP	NFP	loyalty	PF	PQ	PR	PT	RP
0.7636	0.5027	0.6109	0.5926	0.1984	0.4093	0.4728	0.5501
0.5059	0.3520	**0.7269**	0.4587	0.2875	0.3067	0.4074	0.5165
0.6635	**0.7481**	0.6334	0.4762	0.3448	0.2709	0.3719	0.4208
0.4500	0.4452	**0.7853**	0.3427	0.2851	0.1348	0.2265	0.4376
0.5388	0.4586	**0.7785**	0.4974	0.4471	0.2833	0.2857	0.5004
0.8270	0.5599	0.4183	0.3721	0.3418	0.1857	0.3098	0.3147
0.8545	0.6216	0.6520	0.4966	0.3422	0.2412	0.3712	0.5034
0.5902	0.5710	**0.7726**	0.4824	0.3770	0.3913	0.4060	0.5129
0.3211	0.2461	0.4668	0.5017	0.2763	0.4349	0.4219	**0.7861**
0.4005	0.5105	0.3787	0.4928	**0.8349**	0.3084	0.2145	0.4020
0.4955	**0.7371**	0.2724	0.2706	0.3794	0.0775	0.0256	0.2278
0.3480	0.2421	0.2771	0.4758	0.3085	**0.7597**	0.4712	0.3222
0.5802	0.5295	0.5944	0.6356	0.4292	0.3822	0.4855	**0.8743**
0.5560	0.5597	0.5803	**0.9122**	0.5047	0.5559	0.5497	0.6202
0.1829	0.1365	0.3162	0.5029	0.2736	**0.7621**	0.5317	0.4081
0.5417	**0.8129**	0.3380	0.3369	0.2732	0.1094	0.1349	0.3584
0.7099	0.6277	0.4605	0.4350	0.3785	0.2287	0.2905	0.3749
0.4932	0.3749	0.4246	**0.8286**	0.3170	0.5993	0.6489	0.5847
0.3021	0.2553	0.2609	0.5193	0.1476	0.4944	**0.7689**	0.3904
0.3450	0.3349	0.3740	0.3773	**0.8265**	0.2873	0.2258	0.3965
0.3902	0.3200	0.3973	0.5719	0.2971	0.5531	**0.8110**	0.5272
0.2758	0.3401	0.4172	0.3658	**0.8747**	0.3071	0.1689	0.3079
0.4983	**0.7644**	0.4993	0.5400	0.4250	0.3361	0.3599	0.4287
0.2512	0.2722	0.2532	0.5190	0.2268	**0.7635**	0.5206	0.3733
0.3895	0.1936	0.3627	0.5213	0.1061	0.5439	**0.8135**	0.3765

Appendix 2: Latent variables correlations

	FP	NFP	PF	PQ	PR	PT	RP	loyalty
FP	1.0000							
NFP	0.7342	1.0000						
PF	0.6038	0.5493	1.0000					
PQ	0.3997	0.4650	0.4851	1.0000				
PR	0.3379	0.2778	0.6549	0.3558	1.0000			
PT	0.4587	0.3228	0.6747	0.2385	0.6676	1.0000		
RP	0.5580	0.4845	0.6902	0.4332	0.4851	0.5476	1.0000	
loyalty	0.6863	0.6038	0.5868	0.4619	0.3735	0.4371	0.6442	1.0000

Appendix 3: Total model overview

Overview	Composite Reliability (CR)	AVE	Cronbachs Alpha (CRA)	R Square	Communality	Redundancy
FP	0.8691	0.6253	0.7981	0.6320	0.6253	0.3005
NFP	0.8503	0.5870	0.7717	0.3646	0.5870	0.1878
PF	0.8629	0.7593	0.6898	0.0000	0.7593	0.0000
PQ	0.8827	0.7151	0.8007	0.0000	0.7151	0.0000
PR	0.8058	0.5803	0.6412	0.0000	0.5803	0.0000
PT	0.8402	0.6369	0.7205	0.0000	0.6369	0.0000
RP	0.8170	0.6912	0.5584	0.0000	0.6912	0.0000
loyalty	0.8503	0.5870	0.7663	0.4816	0.5870	0.1175

CHAPTER 6: Producer relationship segmentation in Malaysia's milk supply chains[5]

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Abstract:

Purpose: Research on buyer-seller relationships in the agricultural sector receives little attention. A growing body of evidence suggests that strengthening buyer-seller relationships fosters more efficient supply chains. Much of the long-term relationship literature tends to treat suppliers as a homogenous group when identifying motivations, strategies and incentives to enhance the quality of buyer-seller relationships. This article explores the role of long-term relationships between buyers and sellers in Malaysia's dairy industry, taking into consideration the heterogeneous nature of producers.

Methodology: This study examines variation in relationship quality (trust, satisfaction, and commitment), loyalty and price satisfaction dimensions, using data from a survey of 133 dairy producers.

Findings: Cluster analysis suggests two well-defined groups differing in terms of demographic characteristics and relationship perceptions about their buyers.

Implications: The study results highlight ways milk buyers can develop and promote more appropriate and efficient marketing strategies with milk producers.

Originality: This study provides evidence of producer relationship segmentation in an agricultural industry of an emerging economy.

Keywords: buyer-seller relationship, price satisfaction dimensions, cluster analysis, dairy industry, Malaysia.

Introduction

Malaysia's dairy industry is changing rapidly as income growth, urbanization, shifting diets and more liberalized trade and investment polices enhance competition among milk processers. Milk demand is expected to increase by more than 30% in the half decade period leading up to 2014 (Beghin, 2006; Dong, 2006). In the face of this rapid growth, the domestic dairy industry is only keeping pace with its overall market share, around 5%. However, domestic dairy companies are seeking a better understanding of how they might compete to take better advantage of a profitable and expanding market (Boniface *et al.,* 2010).

Over the years, government programs included a range of reasonably successful initiatives to improve milk yields and production output. Examples include establishing Milk Collection Centres (MCC), introducing more productive breeds and improving veterinary and extension services. The leading dairy processors have focused on improving logistics in product flows to lower costs, reduce waste and enhance efficiency in their chains. Increasingly, however, dairy processors are exploring the role of producer incentives that go beyond traditional production and product flow logistics. In particular, milk buyers seek information on how they can build stronger and mutually beneficial relationships with their suppliers to secure regular and uninterrupted milk supplies.

A growing agricultural literature suggests that efforts to build and maintain long-term buyer-seller relationships can provide benefits to both the producers and buyers, including traders, wholesalers and processors. The roles of relationships are especially important for highly perishable commodities like milk. Previous studies suggest wide-ranging outcomes and benefits, including lower transaction costs, enhanced efficiencies, joint decision-making, better information sharing and joint investments (Batt, 2003; Lu *et al.,* 2008).

Research on the role of long-term buyer relationships in the agricultural sector is relatively recent. The studies aim to understand how developing and maintaining sustainable relationships can contribute to improved profits over time. For example, the research investigates the determinants of suppliers' trust (Batt, 2003), the effects of producers' loyalty (Boniface *et al.,* 2010), and how commitment between exchange partners influences economic outcomes (Spiller and Schulze, 2007). Other researchers examine networking between exchange partners (Lu *et al.,* 2008) and what determines suppliers' relationship quality (Gyau and Spiller, 2007a; Reynolds *et al.,* 2009). A few studies explore how three relationship variables, trust, loyalty and commitment, influence

the economic and non-economic business performance of the producers (Gyau and Spiller, 2008). The emerging consensus from these studies is that the stronger the buyer-seller relationship, the more efficient and sustainable the supply chain.

This study attempts to add to the long-term relationship literature in several ways. First, it aims to provide an agricultural sector example in an emerging economy. Second, it expands on existing literature by gaining insights of the sellers' relationships perception. Finally, it explores the price satisfaction dimensions of producers. Much of the existing literature tends to treat suppliers as homogeneous. The purpose here is to investigate the nature of long-term relationships and better understand the economic implications by examining how different seller characteristics influence seller-buyer relationships. The paper contends that strategies and policies seeking to enhance quality buyer-seller relationships in the agricultural sector need to be tailored to the specific socio-demographic and economic attributes of the sellers.

The next section presents an overview of the Malaysian dairy industry development. Next the research methodology and cluster solutions are outlined, followed by analysis of the results.

Malaysia's dairy industry and market relationships

Over the past two decades, the Malaysian Government has continually structured and tailored dairy industry development through extensive research and investment. The establishment of Milk Collection Centres (MCC) through the Department of Veterinary Services (DVS) represent the initial steps to enhance the country's milk supply chain. The MCC helps dairy producers who are predominantly small-scale farmers to market the milk directly to processors. A "Memorandum of Understanding" obliged producers to provide labour and land while the DVS provided veterinary services, consultation and breed guidance to the producers. The MCC buys milk based on milk grades and quality at predetermined and subsidized prices (Wells, 1981).

In volatile food markets, close relationships with sellers can be crucial for buyers seeking supplies are scarce. Researchers identify a number of variables that influence the relationship, including trust in the partner and satisfaction with the relationship. Batt (2003), for example, argues that trust plays a significant role in buyer-seller relationships. The presence of trust in a relationship creates market barrier to other buyers. Trust initially promote mutual understanding between exchange partners and strengthen the relationships. Other research identifies how satisfaction and trust improves the relationship quality

between exchanges partners (Gyau and Spiller, 2007b). Basically, quality relationships emerge when both parties develop mutual goals, joint actions and communicate frequently (Reynolds *et al.*, 2009). In the long run, these relationships variables strengthen business relationships and promote long-term relationships in which both parties have higher commitment and loyalty in their relationships.

In the dairy industry, coordinated and integrated supply chains are needed because fresh milk is highly perishable. The need for economic motivations including prices, lower transaction costs are crucial (Abdulai and Birachi, 2008; Siqueira and Aguar, 2008). However, promoting relationship outcomes such as trust, satisfaction, commitment and loyalty in the relationships encourage sustainable and integrated business relationships (Batt, 2003; Espejel *et al.,* 2008). Producers are not alike in nature but varied in reality and while other scholars identified the economic and management profiles of the producers (Rosenberg and Turvey, 1991; Espinoza-Ortega *et al.,* 2007), we attempt to understand the producers' characteristics from the business relationships point of view.

This study proposes to add to the long-term relationship literature by treating producers as heterogonous in an effort to better understand the nature of relationships in Malaysia's dairy industry and offer suggestions on how to improve its efficiency.

Methodology

Measurements of the relational variables

The measurement scales for the variables were developed from the literature on inter-firm relationship performance. Each of the items used represent the relationships variables such as trust and satisfaction. We developed 7 items to represent each variable all adapted from the literature. However, after conducting factor analyses and reliability tests (Cronbach Alpha), the items used to represent the variables were reduced (see Appendix 1 and 2).

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) while relationship commitment and satisfaction variables adapted from Morgan and Hunt (1994), Anderson and Narus (1990) and Ganesan (1994) respectively. Price satisfaction dimension was adapted from Matzler *et al.* (2007).

In all cases, a five point likert-scale type questions ranging from 1=strongly disagree to 5 = strongly agree, were used to measure the latent constructs of trust, satisfaction, relationship commitment, loyalty and price satisfaction dimensions.

Survey Design

In June and July, 2009, 133 producers out of a population of 550 in four selected states in Malaysia were randomly interviewed. The four selected states, Johor, Melaka, Sabah and Selangor provide a representative overview of dairy farm operations throughout Malaysia accounting for all the various forms of marketing channels and scales of operation.

The questionnaire was designed based on a two-step approach. First, a qualitative exploratory study consisting of a literature review, field visits, four key-informant interviews and interviews with relevant agencies (such Department of Veterinary Services, Malaysia and Sabah International Dairies) to understand the dynamics of dairy producer-buyer relationships was undertaken.

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 questionnaires were administered using face to face interviews which were conducted at the respondent's premises. 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.

Description of the sample

The demographic variables are presented in Table 1. The dairy producers in Malaysia are predominantly small-scale producers with some few large-scale producers. The DVS records suggest that dairy producers in Malaysia are mainly primary and secondary school certificate holders and have been in the business for more than 10 years.

Table 1 shows that most of the respondents are between 41 to 50 years old and completed secondary education. The data indicate that 35 producers have 1-5 years of experience in the business, the rest have more than 10 years experience. The respondents are predominantly small-scale producers selling to MCC, the main buyer. A small proportion of producers consider private companies as their main buyer.

Table 1: Respondents age, education, experience and firm size

Demography Variables		
Age (years)	Numbers of producer	Percentage (%)
19-30	13	9.8
31-40	36	27.1
41-50	47	35.3
51-60	28	21.1
61-70	9	6.8
Level of education		
Primary and secondary education	105	78.9
Diploma and certificate education	23	17.3
Tertiary education	5	3.8
Experience in the business (years)		
1-5	35	26.3
5-10	29	21.8
10-15	21	15.8
15-20	18	13.5
20-25	13	9.8
25-30	12	9.0
Farm size (number of cattle)		
Small-scale (1-30 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

Statistical analysis

The data analysis comprised a number of steps. The Data Analysis and Statistical Software (STATA) version 10 was used for all statistical analysis. In the first step, the principal component analysis with varimax rotation was used to determine the dimensionality of the variables. 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 most of the components were above the conventional cut off point of 0.60.The results of the Principal Component Analysis (PCA) are shown in Appendix 1 and 2.

In the next stage, two-stage cluster analysis was conducted. The main objective of cluster analysis is to establish groups internally as homogenous as possible and externally (in comparison to each other) preferably heterogenous. In order to identify the appropriate number of groups, we performed a hierarchical cluster analysis and by examining the dendrogram and Calinski / Harabasz pseudo-F (Milligan and Cooper, 1985; Calinski and Harabasz, 1974), we identified the optimal number of clusters.

We then conducted a k-means non-hierarchical analysis identifying two main producer segments. The resulting clusters are compared through two-group mean-comparison test (t-test) to determine if there are differences between the clusters. The level of trust, satisfaction, relationship commitment, and loyalty and price satisfaction dimensions variables are compared between the two clusters to further characterize the producers.

Result and discussions

To validate the intended relationships variables, we performed a PCA using varimax rotation on relationship items that represent trust, satisfaction, relationship commitment and loyalty. Each of the intended variables shows unidimensional factor loadings ranging from 0.685 to 0.846 with the KMO for trust, satisfaction, relationship commitment and loyalty present acceptable scores at 0.709, 0.759, 0.814 and 0.785 respectively as shown in Appendix 1.

The results of the PCA for the price satisfaction dimension also indicate a unidimensional construct for each of the dimensions as shown in Appendix 2. The KMO scores were also within the acceptable range at 0.6434 for price reliability, 0.591 for relative price, 0.705 for price-quality ratio, 0.594 for price fairness and 0.670 for price transparency. All of the constructs (Appendix 1 and 2) had acceptable values for the main statistics and reliability coefficients (see Cronbach's alphas in Table 2 and Table 3).

Next, a cluster analysis was performed based on the relationship variables and price satisfaction dimension. Two groups of producers are identified based on their relationship perception towards their buyers. The mean of the respondents in each cluster is shown in Table 2 while the means for the producer's perception towards the price satisfaction with the buyers are shown in Table 3. The results of the t test were significant among the

various clusters indicating that the clusters are as homogenous within and heterogeneous between. We further explain the cluster descriptions as follow:

Cluster 1: There are 106 respondents in this cluster, which constitutes of 78% of the sample. The producers are likely to engage in long-term relationships as they are loyal and committed to their buyers. They have a high trust in their buyers. Most of the producers in this group earned average profits around RM 4000 per month and most of them comprise of small-scale and semi commercial producers. In terms of price satisfaction, they react to price reliability, price fairness and price transparency. They are labelled as relationship oriented group (RG).

Cluster 2: The second cluster comprise of 20 % of the sample. Their average profit is approximately a RM 10000 per month. They are very market oriented producers and react with the real market price. Thus, they are committed with their buyers but easily exchange buyer when offer a reliable and transparent milk price. They are referred as market-driven group (MDG).

Evaluation of Clusters

To distinguish between clusters and to establish appropriate marketing strategies, the two groups are evaluated based on four main relationship variables. Trust, satisfaction, loyalty and relationship commitment are well known in promoting long-term relationships between exchange partners (Lu *et al.*, 2008;).

As shown in Table 2, the relationship group has higher trust and satisfaction for their buyers compared to the market-driven group. Considering the nature of the RG, they are vulnerable to market exploitation and discrimination. Therefore, securing trusted buyers can be seen as discerning ways to promote closer relationships. Buyers´ who keep promises and meet producers' expectation in the business may have the possibility to build long-term relationship with the RG.

On the contrary, the MDG has more milk yield to offer and more production costs to bear. They initially look for constant milk buyers such as milk processors and at the same time reduce transaction costs by vertically integrating with the buyers. MDG will trust in buyers that can provide technical expertise and skill in the dairy business. Milk buyers' profound expertise and skills indicate a proven record in the business and having

relationships with these buyers promote technology and knowledge transfer (Eaton and Shepherd, 2001; Espinoza-Ortega *et al.*, 2007).

Table 2: Producer's relationships perception of their buyers

Relationship variables	Relationship group (RG) =106 / 79.69% μ	Market-driven group (MDG) n=27 / 20.31% μ	t-stat
Trust (α = 0.737)			
My buyer promises are reliable	4.27	3.37	6.45[a]
I can trust my buyer	4.35	3.37	5.35[a]
I have trust in my buyer skill and expertise in the business	4.22	3.48	5.10[a]
My buyer cares for my welfare	4.15	2.85	8.30[a]
Satisfaction (α = 0.763)			
I feel satisfied doing business with my buyer	4.24	3.37	6.17[a]
My buyer often meets my expectations	4.17	3.30	6.40[a]
My buyer treat me fairly and equitably	4.18	3.30	5.90[a]
My buyer is quick to handle my complaints	3.85	2.85	6.20[a]
Relationship Commitment (α = 0.793)			
Our relationship is something that we are very committed to	4.25	3.74	4.09[a]
I feel committed to my buyer	4.22	3.48	6.27[a]
I want to maintain indefinitely our relationship	4.28	3.93	3.10[a]
I want to improve my relationship in long-term	4.28	3.78	4.13[a]
I have maximum effort to maintain our relationship	4.25	3.85	3.59[a]

[a] Statistically significant at 1%

Table 2 (continue): Producer's relationships perception of their buyers

Relationship variables	Relationship group (RG) =106 / 79.69% μ	Market-driven group (MDG) n=27 / 20.31% μ	t-stat
Loyalty (α = 0.649)			
If I have other alternative buyer, I will remain with this buyer	3.97	2.89	6.44[a]
I will continue to do more business with my current buyer in the next few years	4.73	3.56	7.49[a]
I am loyal to my buyer	4.75	3.81	6.82[a]
I will ask other dairy producer to seek assistance from my buyer	4.35	2.81	9.24[a]

[a] Statistically significant at 1%

The presence of trust and satisfaction in buyer-seller relationships may promote relationship quality between exchange partners. Relationship quality (RQ) can be defined as the producers' perception of how well their relationships fulfil the expectations, predictions, goals and desires of the customer, and can be considered as an appropriate indicator for success of a relationship (Gyau and Spiller, 2007b). Therefore, securing and capturing producers' trust and satisfaction is important to the milk buyers wishing to improve their relationships.

Relationship commitment and loyalty can be used as a measure of long-term and sustainable business relationship since both relationship variables are not built overnight (Morgan and Hunt, 1994; Rauyruen and Miller, 2007). As shown in Table 2, the RG is highly committed and loyal to the buyers. Given the fact that this group is predominantly small-scale producers, they produce lower quantities milk compared to the MDG. Therefore, by having the same buyer, they can reduce the transaction costs such as search and transportation costs.

The MDG, however, scores slightly higher on the relationship commitment with the exchange partners. It is understandable that being large-scale producers, they may have the advantage of producing more milk and access to greater market. High volume of milk means higher level of sales when they are able to identify suitable buyers. In that case they are more likely to be committed to the relationships and secure constant sales. However, in

the long run, they may change buyers if the current buyer does not meet their expectation and there is an alternative buyer.

Price satisfaction comparison between clusters

Price satisfaction refers to the psychological result of a difference between price expectations and price perceptions. Hence, by securing price satisfaction, producers may stay in the relationship and be loyal with the buyers (Matzler, *et al.*, 2007). There are many dimensions of price satisfaction which are considered for this study. These include price reliability, relative price, price quality ratio, price transparency and price fairness as shown in Table 3.

Table 3: Producer's price satisfaction scores

Price satisfaction dimensions		Relationship group (RG) n=106 / 79.69% μ	Market-driven group (MDG) n=27 / 20.31% μ	t-Stat
Price Reliability (α = 0.641)				
Description	**Statement**			
Price does not change unexpectedly and suppliers are informed timely (Matzler et al., 2007).	Milk price changes are communicated properly	4.14	3.70	4.21[a]
	Milk price changes are communicated timely	4.11	3.56	5.13[a]
	My buyer keeps all promise regarding milk price	4.08	3.63	3.43[a]
Relative Price (α = 0.587)				
Price of the offer compared to that of competitors' offers (Matzler et al., 2007).	Terms and condition of my buyer are better tailored to my needs than those of other buyers	3.62	3.04	3.72[a]
	I am convinced that my buyer is the best choice	4.12	2.93	7.63[a]
	I do not believe other buyer will have the same or even better milk price offer	3.45	3.15	1.49

[a] Statistically significant at 1%.

Table 3 (continue): Producer's price satisfaction scores

Price satisfaction dimensions		Relationship group (RG) n=106 / 79.69% μ	Market-driven group (MDG) n=27 / 20.31% μ	t-Stat
Price Quality Ratio (α = 0.801)				
The price receives from their buyer reflecting the quality of the product (Zeithaml, 1988).	I get a good price-quality ratio	3.94	2.89	6.87[a]
	I have the impression that I know what I am paying for	3.75	2.85	4.71[a]
	I agree with the milk price and grading system	3.89	2.93	4.57[a]
Price Fairness (α = 0.656)				
Consumers gain satisfaction from a price of a product if they believe that the offered price is favourable and fair (Campbell, 1999; Diller, 2000).	My buyer does not take advantage of me	4.19	2.96	9.28[a]
	My buyer always consistence with the same pricing formulas	4.06	3.48	5.94[a]
	The buyer offer me fair and reasonable milk price	3.89	3.00	4.65[a]
Price Transparency (α = 0.721)				
Clear, comprehensive, current and effortless overview about a company quoted prices (Matzler et al., 2007).	My buyer milk price is clear, comprehensible and understandable	4.08	3.67	4.49[a]
	Milk price information is understandable and comprehensive	4.10	3.67	4.25[a]
	Milk price information is complete, correct and frank	4.21	3.63	5.13[a]

[a] Statistically significant at 1%.

Price reliability includes the notion of price confidence, consistency and favourability (Diller, 1997). Matzler *et al.* (2007, p.221) explains that "Customers will perceive high price reliability if there are no hidden costs, if prices do not change unexpectedly. If prices change, customers should be informed properly and in a timely

manner to build trust and maintain a long-term relationship." In this research, all of the respondents in the RG agreed that prices are communicated timely and properly with regards to price changes while the MDG somehow "agree and disagree" that the buyer offer a reliable milk price.

Relative price is related to comparing comprehensively prices offered by other buyers and current buyers (Diller, 1997). Knowing that the current buyer offer better and reasonable price in comparison to other buyers, sellers feel satisfied so more likely to remain with the buyer. In this study, the RG are relatively satisfied price while the MDG feel otherwise.

For the price-quality ratio, the MDG does not agree that they receive prices which are a reflection of the quality, thus have low price quality ratio. They expect higher prices offered for their milk quality. The expectation of higher milk prices is also mutually shared with the RG. The price-quality ratio is related to how well the price offered by the buyer is based on the quality value of the producers.

In terms of price fairness, the RG believe that their main buyer offers them a fair and reasonable price while the MDG does give a clear stand on the price fairness as they rated average 3.00 for the means which is basically partly agree or disagree.

Lastly, the RG has a higher rating than the MDG on price transparency which is connected with the price formula offered by the buyers (Schroeder *et al.,* 1998). This indicates that the RG is confident that milk price information is complete, correct and frank. Therefore, the RG is satisfied with the price transparency dimension while the MDG remain moderate and require a better price formula from the buyers.

Demographic characteristic of producer segments

To gain a clear characteristic of each group, the demographic characteristics of the producers are examined. The outcome of the cluster analysis between the relationship and market-driven groups are distinguished by the relationship variables and price satisfaction dimensions. They do not differ significantly in terms of age, level of education, main source of income, main milk buyers, between states or average milk production (see Table 4). Both groups, however, differ in terms of firm sizes, average monthly profit and number of years in the dairy business.

Based on the demographic characteristics in Table 4, the RG represents each of the producers' firm size categories (from small-scale producers to large-scale producers) but are predominantly small-scale and semi-commercial producers, .in the business for an

average of 12 years. Most of the producers earned average farm profit around RM3900 monthly for the whole group. On the contrary, the MDG seems to be much more stable with average farm profit around RM 10000 per month. The producers have an average of 18 years experience in the business. Five of the producers in this group have more than 100 cows and 10 producers have between 31 to 100 cows, while the rest of the producers have less than 30 cows.

Table 4: Demographic variables and producer's segmentation

	Cluster 1 n=106 / 79.69% μ	Cluster 2 N=27 / 20.31% μ	t-stat
Difference between states	1.55	1.67	-1.12
Average Age (years)	44	46	-0.96
Level of Education :			
Primary and secondary school	84	21	
Diploma and certificate	19	4	-0.54
Tertiary Education	3	2	
Producer's main source of income (businesses)			
dairy as main income	93	22	
other business as main income	7	4	-0.390
working with private/government as main income	6	1	
Number of years in the dairy business	12 years	18 years	-2.92[a]

[a,b] Statistically significant at 1% and 5% , respectively.

Table 4 (continue): Demographic variables and producer's segmentation

Farm Size (number of cattle)			
Small-scale (1-30 cows)	45	12	
Semi-commercial (31-50 cows)	22	3	-2.17[b]
Commercial (51 -100 cows)	25	7	
Large-Scale (101 and above cows)	14	5	
Average milk production (kilos)	10 kilos	9 kilos	0.87
Producer's main buyer			
Public sector (MCC)	82	22	1.13
Private sector	24	5	
Average farm profit (Ringgit Malaysia)	RM 3940	RM 10007	-2.10[b]

[a ,b] Statistically significant at 1% and 5% , respectively.

To sum up, the characterization of the dairy producer segments based on their perceived relationships toward their buyers and price satisfaction dimensions with statically significant differences between groups are presented in Table 5.

Table 5: Characterization of producer segments

Variable	Cluster 1 n=106 / 79.69%	Cluster 2 n=27 / 20.31%
Producers' trust in their buyers	High	Moderate
Producers' satisfaction toward the buyers	High	Moderate
Producers' relationship commitment toward the buyers	High	Moderate
Producers' loyalty with they buyers	High	Moderate
Price reliability	High	Moderate
Relative price	Moderate	Moderate
Price-quality ratio	Moderate	Low

Table 5 (continue): Characterization of producer segments

Variable	Cluster 1	Cluster 2
	n=106 / 79.69%	n=27 / 20.31%
Price fairness	High	Moderate
Price transparency	High	Moderate
Number of years in the dairy business	Relatively less	Many
Firm Size	Small-Medium	large
Average farm profit	Moderate	High

Conclusion and implications

Research on producers segmentation has examined the economic characteristics and management profiles of producers (Rosenberg and Turvey, 1991; Espinoza-Ortega *et al.*, 2007). In this paper, producer segmentation is based on long-term relationship variables and price satisfaction. This study finds two main producer groups within the sample. First, the relationship group which considers long-term relationships important to their businesses. This group has significant trust in their buyers and are committed and loyal to them. Reflected by their average farm profit, around RM 4000 monthly, they focus on sustainable business relationships. In terms of milk price, they are quite satisfied with the current milk prices offered by the buyers especially in terms of price reliability, price fairness and price transparency. Most of this group includes small-scale and semi-commercial producers.

The market-driven group is made up of farmers who are willing and able to switch buyers at any time as they are not as loyal to their current buyers. This group is interested in reliable and transparent milk prices. The market-driven group have stable average monthly profits and have been in the dairy business for more than 18 years. This evidence indicates that they have good knowledge in the dairy industry and have more experience.

The findings have some implications for both policy and management in the milk industry in Malaysia. The main managerial implication is that buyers who want to promote sustainable and uninterrupted milk supplies should focus on different strategies for the different groups. For instance, buyers can improve their relationships with the relationship

oriented group by engendering relationship management practices that can sustain the trust and commitment levels. This may include joint activities and problem solving, better communication and flexibility (Lu *et al.*, 2008). Such activities are more likely to be successful for the relationship group than the market-driven group.

For policy, we suggest that the government through the MCC should ensure clear and transparent price formulas, taking into consideration milk quality. As the largest milk buyer, the government could gain credibility by testing the milk to determine the quality. Furthermore, the price that is associated with each quality level also needs to be more transparent to enhance farmers` confidence in the pricing system.

The outcomes of this research should be seen within the context of some limitations which could stimulate further research on the relationship performance between the dairy producers and their buyers. The first limitation is that although buyer-seller relationship is a dynamic phenomenon, this study considers the relationship variables at a particular point in time. The cross-sectional nature of the data implies that changes in the variables used over time are not captured. Assessing time series data would provide better insights into how dimensions of the relationship variables shift over time. Secondly, the relationship performance was measured from the perspective of the producers only. Future research should therefore consider measuring the relationship performance dimensions from the perspective of the buyers in order to triangulate the results and to determine if there are any perception gaps in the measurements.

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Appendix 1:

Principal component analysis: trust, satisfaction, relationships commitment and loyalty

Variables and indicators	*Factor loading*	*KMO**
Trust		**0.709**
My buyer promises are reliable	0.801	
I can trust my buyer	0.774	
I have trust in my buyer skill and expertise in the business	0.725	
My buyer cares for my welfare	0.687	
Satisfaction		**0.759**
I feel satisfied doing business with my buyer	0.787	
My buyer often meets my expectations	0.781	
My buyer treat me fairly and equitably	0.734	
My buyer is quick to handle my complaints	0.708	
Relationship Commitment		**0.814**
Our relationship is something that we are very committed to	0.774	
I feel committed to my buyer	0.760	
I want to maintain indefinitely our relationship	0.750	
I want to improve my relationship in long-term	0.730	
I have maximum effort to maintain our relationship	0.685	
Loyalty		**0.785**
If I have other alternative buyer, I will remain with this buyer	0.846	
I will continue to do more business with my current buyer in the next few years	0.814	
I am loyal to my buyer	0.802	
I will ask other dairy producer to seek assistance from my buyer	0.723	

*KMO: Kaiser-Meyer-Olkin Measure of Sampling Adequacy

Appendix 2:

Principal component analysis: price satisfaction dimension

Variables and indicators	*Factor loading*	*KMO**
Price Reliability		0.634
Milk price changes are communicated properly	0.807	
Milk price changes are communicated timely	0.779	
My buyer keeps all promise regarding milk price	0.702	
Relative Price		0.591
Terms and condition of my buyer are better tailored to my needs than those of other buyers	0.819	
I am convinced that my buyer is the best choice	0.706	
I do not believe other buyer will have the same or even better milk price offer	0.692	
Price Quality Ratio		0.705
I get a good price-quality ratio	0.868	
I have the impression that I know what I am paying for	0.838	
I agree with the milk price and grading system	0.830	
Price Fairness		0.594
My buyer does not take advantage of me	0.854	
My buyer always consistence with the same pricing formulas	0.781	
The buyer offer me fair and reasonable milk price	0.670	
Price Transparency		0.670
My buyer milk price is clear, comprehensible and understandable	0.828	
Milk price information is understandable and comprehensive	0.813	
Milk price information is complete, correct and frank	0.760	

*KMO: Kaiser-Meyer-Olkin Measure of Sampling Adequacy

CHAPTER 7: Factors influencing Malaysian consumers' consumption of dairy products[6]

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Statement of Authorship

Bonaventure Boniface developed the survey questionnaire, collected and analysed the data, developed the conceptual model and wrote the article. I am also the corresponding author.

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Signature Date 16th June 2011

Wendy Umberger supervised the conceptual model and helped interpret the data, and edits the text of the article. Gives consent to Bonaventure to present this article for the Doctor of Philosophy examination.

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Signature Date 17th June 2011

Abstract:

Increasing demand for dairy products in Malaysia is driving government initiatives and structural change in the domestic dairy industry in order to increase competitiveness and self-sufficiency. This study endeavours to investigate the drivers of increasing dairy demand by examining the factors influencing Malaysian consumers' consumption and perceptions of various types of dairy products. A survey of 435 respondents was conducted and the data were analysed using logit models. The results indicate that demographic variables such as age and ethnicity as well as other attitudinal variables significantly influence consumers' increasing consumption of dairy products. Managerial recommendations for the domestic dairy industry are suggested and policy implications are discussed.

Keywords: Dairy products, consumers, milk consumption, Malaysia

1. Introduction

Similar to many Asian countries, significant transformation is occurring in Malaysia's food marketing system as a result of industrialization, economic growth, urbanization, globalization and trade liberalization (Arshad, Mohamed & Latiff, 2006). These changes have led to more affluent consumers who demand higher quality food products which are differentiated through branding, labelling information and a variety of quality attributes to meet consumers' increasingly diverse needs and preferences (Ishida, Law & Aita, 2003). Additionally, as consumers become more educated they tend to become more conscious about health and wellness issues related to food choices and diet (Quah & Tan, 2010). All of these factors are driving shifts in Asian diets away from starch-based staples (e.g. rice) and increasing demand for wheat-based, meat and dairy products as well as fruits and vegetables (Prescott, Young, O'Neill, Yau, & Stevens, 2002; Warr, Rodriguez & Penm, 2008).

Food consumption patterns in Malaysia appear to be evolving in a similar pattern to other emerging Asian economies, most notably Thailand, China and the Republic of Korea (Ishida et al., 2003; Warr et al., 2008). Per capita consumption of livestock products in Malaysia, including dairy, is substantially below Organisation for Economic Cooperation and Development (OECD) countries such as the United States, Australia and Japan. Yet, compared to Thailand, China and the Republic of Korea, per capita consumption of livestock products is relatively high. For example, in 2005 (the latest consumption data available), Malaysians consumed approximately 44 kilograms (kgs) of milk per person a year, compared to 25, 18 and 40 kgs in Thailand, China and the Republic of Korea, respectively (Warr et al., 2008). From 1990 to 2005, per capita consumption of fresh whole milk increased 33% from 32.9 kgs to 43.5 kgs. Dong (2006) and Beghin (2006) projected that dairy consumption in Malaysia will continue to increase substantially over the next ten years due to continued population and income growth.

Unlike, the domestic fruit, poultry, pig meat sectors, the Malaysian beef and dairy industries are relatively small. Various conditions, such as the hot and humid climate and limited land availability and a structure consisting of mostly smallholders with small herds have constrained domestic productivity, leading to cheaper imports and Malaysia's low level of self-sufficiency (approximately 5% in 2010) for beef and dairy (Warr et al., 2008). In 2005 imports of dairy products were valued at approximately USD $444 million and accounted for the second-largest share of agricultural imports into Malaysia. In 2010,

imports of dairy products by the government increased by 16% from 2005 (Department of Statistics, Malaysia, 2010).

A range of Malaysian government research and development programs and initiatives have been implemented over the years in an attempt to encourage growth of the domestic beef and dairy industries and increase productivity. Examples include the establishment of Milk Collection Centres (MCC), the introduction of more productive dairy breeds and the improvement of veterinary and extension services (Boniface, Gyau, Stringer & Umberger, 2010). Various scholars have studied the Malaysian dairy sector and have suggested methods to help increase the competitiveness and to grow the domestic dairy industry, including reducing production costs by increasing promoting integrated farming methods (Wan Hassan, Phipps & Owen, 1989), improving animal husbandry and management by using computerised record systems (Pharo et al., 1990) and improving the quality of domestic milk supplies (Chye, Abdullah & Ayob, 2004).

More recently, the focus of the Malaysian Government through the *Ninth Malaysia Plan, 2006-2010* is on increasing self-sufficiency by growing domestic dairy production through large-scale commercial farming and value-adding processes (Warr et al., 2008). For this initiative to be successful, the dairy industry must focus not only on increasing production capacity, but also on developing a consumer-focused value chain (Boniface et al., 2010). Currently, there are no known studies examining the factors influencing Malaysian consumers' demand for dairy products. Thus the primary aims of this paper are (1) to explore Malaysian consumers' purchasing patterns, perceptions of and preferences for various types of dairy products; (2) to determine the relative importance of various product attributes and information to Malaysian consumers when purchasing dairy products; and (3) to investigate factors influencing Malaysian consumers increasing demand for dairy products and fluid milk. The findings of this research can be used to improve the management of dairy supply chains, and to develop strategic plans and policies to aid in the development and expansion of the domestic Malaysian dairy industry.

1.1 Factors Influencing Malaysian Food Consumption

Although no studies have specifically addressed the objectives related to Malaysians' dairy consumption behaviour explored in this research, several studies have examined Malaysians' food consumption trends and factors influencing their demand for food products which may be considered to be higher quality or perceived to be safer or healthier (e.g. organic, natural, MSG-free meat). Recent consumer research suggests that Malaysian

food consumption is becoming increasingly diverse and consumers are growing more concerned about the quality, safety and nutritional content of their food (Ishida et al., 2003; Liana, Radam &Yacob, 2010 ; Prescott et al., 2002; Rezai, Mohamed, & Shamsudin, 2011).

A number of consumer characteristics such as socio-demographics (e.g. gender, age, income, education, presence of young children in the household, ethnicity), knowledge, attitudes and perceptions have been shown to influence Malaysian consumers' demand for quality-differentiated food products (Ong, Kitchen, & Jama, 2008; Prescott et al., 2002; Quah & Tan, 2010; Radam, Yacob, Siew Bee & Selamat, 2010; Rezai, Mohamed, Shamsudin & Chiew, 2010; Rezai, et al., 2011; Shaharudin, Pani, Mansor, Elias, & Sadek, 2010; Sheng, Shamsudin, Mohamed, Abdullah & Radam, 2008). Additionally, extrinsic product cues such as packaging, food labels, quality certifications, brands and promotional /marketing material can influence both consumers' perceptions and choices of food products (Liana et al., 2010; Ong et al., 2008; Prescott et al., 2002).

Several studies suggest that ethnicity has a significant impact on Malaysians' food consumption preferences and behaviour. Quah and Tan (2010), Sheng et al. (2008) and Warr et al. (2008) found Malaysians' food consumption patterns to be significantly different across three ethnic groups: Malay (approximately 50%), Chinese (25%) and Indian or other ethnic backgrounds (25%). Generally speaking, the Malays are predominantly Muslim and require food to be *Halal* certified. Chinese and Indian consumers tend to have more diverse diets, particularly with respect to consumption of proteins (Warr et al., 2008). The Malay segment is experiencing the largest growth both in terms of size and household income. Malays are demanding more functional fruit and vegetable food products rather than higher valued meat and fish products (Quah & Tan, 2010; Sheng et al., 2008). Quah and Tan (2010) found that Malay and Chinese consumers more likely to purchase organic food products than Indian or other ethnicities.

Several studies have found that gender and the presence of children in the household significantly influence food purchasing decisions. Malaysian men were found to spend significantly more than women on food and beverages away from home (Ong et al., 2008). Radam et al. (2010) found that females were generally more health-conscious than men and consumers in households with children less than 12 years of age were generally less concerned about price and more interested in purchasing safe and wholesome food. Additionally, females were more likely to be willing to pay a premium for "MSG-free" meat, but consumers from households with four or more people, including children tended

to be more price sensitive and less likely to pay a premium for "MSG-free" meat. Consistent with organic consumer studies in other countries, Quah and Tan (2010) found that women are significantly more likely than men to purchase and consumer organic food.

In addition to ethnicity, gender and household composition, other demographic variables such as income, education and age have been found to significantly influence Malaysian's food consumption. Higher income consumers were more likely to purchase organic food products (Quah & Tan, 2010; Rezai et al., 2011) and more likely to be willing to pay a premium for "MSG-free" meat (Radam et al., 2010). Rezai et al. (2011) found that respondents who had completed some level of tertiary education were more likely to buy organic vegetables, which were perceived by respondents to be 'healthier,' and Radam et al., 2010 found consumers with some University education were more likely to pay a premium for "MSG-free" meat.

Malaysian consumers between the age of 20 and 40 years old were found to purchase more organic and 'healthy' food while consumers aged 65 and over were found to spend relatively more on beverages and tobacco products (Ong et al., 2008; Rezai et al, 2011). When examining the relationship between age and organic food consumption, Quah and Tan (2010) found that for each 10-year increase in age, Chinese-Malaysian consumers are about 11% more likely to purchase organic food products. Interestingly, age was not a significant variable in the Malaysian consumer models examining Malay and Indian consumers' organic food purchases.

As well as the socio-demographic factors discussed above, extrinsic cues, particularly quality or production certifications authorized by government agencies or religious organizations (e.g. *Halal*), have been found to significantly influence Malaysians' food purchase decisions. For example, Rezai et al. (2011) and Liana et al. (2010) found that Malaysian consumers were more likely to purchase organically grown vegetables and meat products, respectively, certified by a government agency versus products not carrying the government certification. These studies shed light on the various factors which influence Malaysian consumers' preferences and purchases for food products. The following section summarizes key literature related to the increasing global consumption of dairy products.

1.2 Factors Influencing Consumption of Dairy Products

As discussed previously, global demand for dairy products is increasing dramatically as consumers in developing countries become more affluent (Ishida et al., 2003; Warr et al.,

2008). Much of this demand growth is driven by growing evidence and awareness that dairy products can provide essential vitamins and nutrients as well as other health benefits (Heaney, 2000; McGill et al., 2008; Wang, Manson, Buring, Lee & Sesso, 2008). An example of this change can be seen in Malaysia, where traditionally, the morning meal (breakfast) consisted of rice or noodles, but has now significantly shifted to milk, bread and butter. Malaysians also now spend more on milk and dairy products than rice (Ishida et al., 2003).

Consumers' behaviour, preferences and attitudes towards consumption of dairy products differs substantially across countries (Bus & Worsley, 2003; Francesconi, Heerink & D'Haese, 2010; Grunert, TionBeck-Larsen & Bredahl, 2000; Hatirli, Ozkan, & Aktas, 2004; Hsu & Lin, 2006; Richardson-Harman, 2000; Robb & Abdel-Ghany, 2007; Yee & Chin, 2007). Grunert et al. (2000) discuss that consumers' perceptions of dairy product quality are complex and involve much more than sensory attributes. They contend that consumers consider four dimensions when forming perceptions about dairy product quality: (1) hedonic (e.g. sensory attributes such as taste or smell), (2) health-related, (3) convenience-related and (4) process-related (e.g. production processes such as organic, animal welfare or genetic modification). Thus, manufacturers/ processors and marketers must understand the role each of these dimensions plays in driving consumer demand for dairy products and realize consumers may be heterogeneous in their preferences or perceptions of what constitutes dairy product quality.

Richardson-Harman et al. (2000) were able to segment the New Zealand dairy market based on consumers' preferences for creaminess and liking of fluid dairy products, demographic characteristics and attitudinal variables. Bus and Worsley (2003) found Australian consumers perceived whole milk to be of lower quality than other types of milk. In particular, women and elderly consumers were more likely to consume reduced fat milk versus milk with higher fat content. A similar study of U.S. consumers found low fat milk consumption was positively related to age, education level and income (Robb & Abdel-Ghany, 2007). Taiwanese consumers who purchased relatively greater amounts of fluid milk had statistically higher levels of household incomes than consumers who purchased mostly yogurt drinks and flavoured milk (Hsu & Lin, 2006). In Turkey, households' choice of fluid milk sources was found to be significantly influenced by the number of children living in the household and education levels of the respondent (Hatirli et al., 2004).

Only a few studies have examined Malaysian households' dairy consumption patterns (Babolian Hendijani & AbKarim, 2010; Norimah et al., 2008; Prescott et al.,

2002). Malaysian consumers rated health as the most important factor when purchasing powdered milk and product familiarity as the least important (Prescott et al., 2002). The 2003 Malaysian Adults Nutrition Survey examined the food consumption patterns of 6,742 consumers aged 18 to 59 years. The study revealed that adults aged 50-59 were the most frequent consumers of full cream milk, and only 15% of consumers under age 20 consumed milk daily (Norimah et al., 2008). Women were more likely to consume full cream milk daily while men were more likely to prefer and consume less-healthy sweetened condensed milk daily. Norimah et al. (2008) suggest that this difference is likely due to women being more knowledgeable than men about potential health benefits of consuming milk.

To determine how milk intake could be increased among children, Babolian Hendijani and AbKarim (2010) studied the relationships between personal and environmental factors and beverage consumption preferences of primary school children in Malaysia. Consumption of milk relative to other beverages (e.g. mineral water, Milo, and fruit juice) among children was relatively low; and not surprisingly, children preferred flavoured milk to plain milk. Individual positive attitudes about the sensory aspects of milk, social acceptability (e.g. having family and friends who regularly consumed milk), availability of milk at home and packaging were more likely to positively influence milk consumption among children than exposure to advertising or awareness of the health benefits. Bobolian Hendijani and AbKarim (2010) suggest that the most efficient way to increase milk intake of children is to focus on increasing the social acceptability of milk through marketing campaigns to increase consumers' perceptions of the sensory aspects of milk.

The above literature summarizes the key factors shown to affect consumption behaviour of food products, particularly products such as dairy which are often associated with nutritional and health benefits. This research endeavours to add to this literature by increasing of Malaysians' dairy product consumption behaviour, attitudes and perceptions regarding various types of fresh and processed dairy products. The remaining sections summarize the research methods, results and conclusions.

2. Materials and Methods

2.1 Survey instrument and design

In order to understand Malaysian consumer's preferences and consumption patterns, a questionnaire /survey instrument was designed to ascertain information on (a) consumers'

purchasing frequency and consumption patterns of several fresh and processed dairy products, (b) the relative importance of factors which may influence purchases and purchase location of dairy products, (c) perceived benefits gained from consuming dairy products (d) perceptions of fluid milk compared to powdered milk products and (e) socio-demographic information. This consumption behaviour and attitudinal questions were developed based on the literature discussed previously and additional related consumer studies including Jensen, Kesaven and Johnson (1992) and Hsu and Lin (2006).

The purchasing frequency and consumption patterns section asked consumers to indicate how frequently (5 = daily and 0 = never) they purchased fluid milk, milk powder, cheese, yogurt, butter and ice cream. Respondents were asked if they had increased their consumption of dairy products in the last three years, and if so, which products were applicable. A seven-point scale was used by respondents to determine the perceived influence (7 = strongly influential and 1 = not at all influential) of 16 factors to respondents when purchasing (1) dairy products in general and (2) fluid milk. These factors were related to health /nutrition, convenience, quality, affordability, packaging and marketing aspects of dairy products. Respondents were then asked to state the most preferred retail format for purchasing dairy products, and to indicate, using a seven-point scale, the influence of 10 different retail format characteristics (e.g. availability of products, play in determining where dairy products were purchased.

To determine respondents' attitudes towards dairy products (in general) respondents indicated how strongly they agreed or disagreed (1 = strongly disagree and 7 = strongly agree) with 16 statements regarding the quality and acceptability of dairy products. Both positive and negative statements were included in this section to avoid biasing answers. These statements related to health aspects (e.g. good source of protein, good source of vitamins, good source of calcium, dairy is fattening), sensory and social acceptability aspects. Consumers' perceptions of the quality of fresh (fluid) milk relative to powdered milk were then assessed by asking respondents to indicate how strongly they agreed (1 = strongly disagree and 7 = strongly agree) with 20 statements similar regarding product quality and acceptability. All four quality dimensions discussed by Grunert et al. (2000) were included in these attitudinal questions.

Respondents then indicated their awareness and opinion of the Government's school milk program. The final section assessed socio-demographics of respondents (e.g. age, level of education, income, and household makeup). The questionnaire was pre-tested with 30 consumers. Respondents involved in the pre-test were asked to provide feedback

on the length, content, format, comprehensibility and accuracy of the survey instrument. After each stage of pre-testing, the questionnaire was modified; incorporating the feedback and revising the survey instrument accordingly.

2.2 Data collection

The survey was administered and data was collected in 2010 at various locations in Kota Kinabalu, the capital city of the Sabah state of Malaysia. This city is one of the fastest emerging consumer markets in Malaysia with increasing numbers of modern food retailers, including supermarkets and hypermarkets such as Giant, Parkson, Ngiu Kee, and Survey supermarkets. The population of Kota Kinabalu is very culturally diverse and is comprised of consumers with all of various ethnic and religious backgrounds existing in the Malaysian population. A convenience sample of 435 consumers was obtained using mall intercept recruitment methods and face-to-face interviews. Each respondent was randomly approached by a trained enumerator placed in front of one of 12 shopping centres located in Kota Kinabalu. Respondents who were 18 years and older were asked to fill in the questionnaire by completing an interview with the enumerator. A token of appreciation /gift was provided to each respondent upon completion of the survey. Table 1 provides a summary of the socio-demographic profile of the respondents.

Table 1:

Summary statistics for demographic variables

Variable	Description (coding)	%	Mean	Std. Dev.	N
Level of education	0 = Primary school	6.9	1.43	0.85	435
	1 = Secondary school	58.6			
	2 = Technical institutions, Polytechnic	20.7			
	3 = University degree	12.4			
	4 = Graduate degree, Master, PhD	1.4			
Education	0= if having primary and secondary schools	86	0.14	0.35	435
	1= if having tertiary education	14			
Age	0 = 18-24 years	43.7	0.99	1.15	435
	1 = 25-34 years	31.3			
	2 = 35-44 years	12.4			
	3 = 45-54 years	8.7			
	4 = 55-64 years	3.0			
	5 = 65 years and above	0.9			

Table 1(continue):

Summary statistics for demographic variables

Variable	Description (coding)	%	Mean	Std. Dev.	N
Income	Monthly household income in Malaysian Ringgits		1.50	0.99	435
	0 = < MYR 2,079	64.4			
	1 = MYR 2,080-MYR 4,159	26.0			
	2 = MYR 4,160-MYR 6,239	4.8			
	3 = MYR 6,240-MYR 8,319	1.8			
	4 = MYR 8,320-MYR 10,399	2.1			
	5 = MYR 10,400-MYR 15,599	0.9			
Household size	Numbers of family members including children and elderly (over 60 years old)		4.31	2.79	435
Children	Number of dependent children aged between 0-14 years old*		0.88	1.36	435
Wchild	1= if Yes, children aged 0-14 live in the household; 0 = if No		0.38	0.49	435
Elderly	Numbers of individuals living in household that over 60 years of age and above		0.25	0.82	435
Single	0= if married, divorced/ widowed	46	0.54	0.50	435
	1= if single and not married	54			
Gender	0 = if male	65	0.35	0.48	435
	1 = if female	34			
Employment	0 = if unemployed, stay at home parent, retired and disabled.	17	0.83	0.38	435
	1= if working part time and full time,	83			
Ethnicity	1 = Malay	27.1	NA	2.12	435
	2 = Chinese	12.6			
	3 = India	9.0			
	4 = Kadazandusun	28			
	5 = Bajau	23.4			
	6 = Murut	1.4			
	7 = Iban	2.0			
	8 = Bidayuh	7.0			
	9 = Others	5.5			
Fluid Milk Expense	Fresh milk is cheaper and less expensive		3.78	1.66	435

* Note: Malaysian government promotes School Milk Program (provides free fluid milk to school) which include children under 14 years old.

2.2 Data analysis and model development

Several steps were involved in data analysis and development of empirical models to determine factors influencing dairy consumption behaviour. The Data Analysis and Statistical Software (STATA) package (version 10) was used for all statistical analysis. The first step involved basic statistical analysis and evaluation of consumers' responses to the survey question. The initial analysis revealed that consumers' responses to several of the attitudinal statements were highly correlated. Therefore, principal component analysis was used to create various attitudinal variables to be used in models to help explain consumers' dairy consumption behaviour.

2.2.1 Principal Component Analysis

The results of the Principal Component Analysis (PCA) are shown in Table 2. Varimax rotation was used to determine the dimensionality of the variables considered. Factors with Eigen Values of above 1.00 were extracted and factors loading above 0.5 were retained. Five factors: *Nutrition, External, Dairy Negative, Milk Negative, Dairy Packaging* had loadings within the acceptable range of higher than 0.50 (0.680-0.867) and were retained. The variables were named based on the statements/items that were used to form the variable. For instance, *Nutrition* factor is based on consumers' indicated level of agreement with statements that dairy products are 'a good source of calcium' and 'a good source of protein'. The *External* factor consists of consumers' responses related to the influence of social status, family or friends, embedded with *Halal* logo.*Milk Negative* is composed of respondents' agreement with three statements related to negative perceptions of fluid milk: hard to digest, watery and genetically modified. *Dairy Packaging* is a factor representing the relative importance that consumers placed on the type of packaging used for dairy products, the brand of milk and availability of product information on the label or package.

The Kaiser-Meyer-Olkin Measure of sampling adequacy (KMO-MSA) was used to test the appropriateness of the factor analysis scale. As shown in Table 2, all of the KMO values are between 0.500 to 0.920, which is within the accepted region (KMO greater than or equal to 0.50). 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 most of the components were above the conventional cut off point of 0.60 (Boniface et al., 2010).

Table 2:

Principal Component Analysis Results

Factors and Related Statements from Survey	Factor Loadings
Nutrition Factor:	
KMO.920, Cronbach's alpha = .917	
Dairy products are a healthy choice for me and my family	0.867
Dairy products are a good source of vitamins	0.861
Dairy products are a good source of protein	0.856
Dairy products are a good source of calcium	0.843
Dairy products provide many good nutrients	0.834
Dairy products are low in cholesterol	0.801
Dairy products are a good source of vitamin D	0.716
Dairy products are necessary in my diet	0.680
External Influencing Factor	
KMO .663, Cronbach's alpha = .704	
Family or friends influence my purchases of dairy products	0.820
Consumption of dairy impacts my social status	0.819
Product is embedded with*Halal* logo	0.745
Dairy Negative Factor	
KMO .500, Cronbach's alpha = .650	
Not all dairy products are good for my health	0.861
Dairy products too fattening	0.861
Milk Negative Factor	
KMO = .677, Cronbach's alpha = .0.729	
Hard to digest	0.836
Watery	0.798
Genetically modified	0.786

Table 2(continue):

Principal Component Analysis Results

Factors and Related Statements from Survey	Factor Loadings
Dairy Packaging	
KMO = .680, Cronbach's alpha = .740	
Type of Packaging (e.g. in bottle/ boxes)	0.838
Milk brand (e.g. Nestle, Dutch Lady)	0.813
Complete label information (e.g. Expiration date, nutrition information)	0.783

2.2.2 Empirical models

Two logit models were used to 1) determine the factors that help explain consumers who are more likely to have increased their consumption of dairy products over the past three years and 2) to understand the factors influencing the probability a consumer increased their consumption of dairy products over the past three years. The traditional logit model as described by Greene (2003) is

$$(1)\,\Pr ob(Y=1|X_i)=\frac{e^{x'\beta}}{1+e^{x'\beta}}.$$

The first model explores the factors which help explain the probability an individual increased their consumption of dairy products over the past three years:

$$(2)CONSUP_i=\beta_o+\beta_1 Education+\beta_2 Age+\beta_3 Wchild+\beta_4 Gender+\beta_5 Chinese+\beta_6 Malay+\beta_7 Income+\beta_8 Elderly+\beta_9 Nutrition+\beta_{10} External+\beta_{11} DairyNegative+\beta_{12} Packaging$$

Where the dependent variable *CONSUP* is used to represent consumers who indicated that "yes" they had increased their consumption of dairy products in the last three years. Thus *CONSUP* is equal to 1 if a consumer increased their dairy consumption in the last three years and is equal to 0 otherwise. The subscript *i* is used to represent each individual consumer (*i*=1…435). *Education* is a dummy variable equal to 1 if the respondent acquired higher levels of education (a university degree or at least some postgraduate studies) and

equal to 0 if the respondent acquired lower levels of education (e.g. primary, secondary and polytechnic levels of education). *Age* is a categorical variable representing the age level of the respondent. *Wchild* is a dummy variable indicating the presence of children in the household. *Gender* is a dummy variable indicating the respondent was a female. *Chinese* and *Malay* are ethnicity dummy variables equal to 1 if the respondent was Chinese and Malay, respectively, and equal to 0 if the respondent was another ethnicity such as Kadazandusun, Bajau or Indian. *Elderly* is the number of elderly (age above 60 years old) people living in the household. *Nutrition*, *External*, *Dairy Negative*, and *Packaging* are the factors created using Principal Component Analysis (see Table 2).

The second model explores the factors which may explain the probability an individual consumer increased their consumption of milk in the last three years:

$$(3) CONSUMILK_i = \beta_o + \beta_1 Education + \beta_2 Age + \beta_3 Wchild + \beta_4 Gender + \beta_5 Chinese + \beta_6 Malay + \beta_7 Income + \beta_8 Elderly + \beta_9 Nutrition + \beta_{10} External + \beta_{11} DairyNegative + \beta_{12} MilkNegative + \beta_{13} FluidMilkExpense$$

The dependent variable *CONSUMILK* is equal to 1 if a consumer indicated they increased their consumption of fresh milk in the last three years and is equal to 0 otherwise. The demographic variables *Education, Age, Wchild, Gender, Chinese, Malay, Income, Elderly* are as defined in equation 2. *Nutrition*, *External*, *Dairy Negative* and *Milk Negative* are also as explained in the Principal Component Analysis section. We created composite measures by combining two or more related statements (O'Toole & Donaldson, 2000). For instance, one variable such as *Dairy Negative Factor* derived from two related statements namely "Not all dairy products are good for my health" and "Dairy products too fattening." Another variable (*FluidMilkExpense*) was developed from a single statement (Fresh milk is cheaper and less expensive). A single statement can be used as composite measure if the statement is composite in nature and represent the intended variable (Gyau & Spiller, 2007). Summary statistics and further explanations of each of the variables are provided in Tables 1 and 2.

3.0 Results and discussion

3.1 Characteristics of survey respondents

In total, 435 respondents fully completed the questionnaire. The socio-demographic profiles of the respondents are summarized in Table 1. Approximately 65% of the sample was female, the average age was between 24-34 years old and average income was around

MYR 2,080 to MYR 4,159 monthly. Only 14% of respondents indicated they had completed a University degree or higher level of education. The average household size was 4.31 family members and 38% of the respondents had children aged 14 or younger living at home.

3.2 Preferences of the dairy consumers

In this study we examined consumers' purchasing behaviour of six types of dairy products: fresh milk (fluid milk including pasteurised and UHT milk), powdered milk, butter, cheese (any type), yogurt and ice-cream. Table 3 shows respondents' purchasing frequency for each dairy product. Fluid milk and ice cream are consumed most frequently, with nearly 41% and 34%, respectively, purchasing these products at least weekly. Powdered milk is also purchased regularly (considering the mean consumption frequency), however, the largest share of respondents (22%) purchase powdered milk on a monthly basis. Interestingly, cheese is the least frequently purchased dairy product, with 61% indicating they never purchased cheese.

Table 3:

Consumers' purchasing frequency of various dairy products

Dairy Product	5 = Daily	4 = Weekly	3 = Fort-nightly	2 = Monthly	1 = < once/ month	0 = Never	Mean	Std. Dev.	N
Milk	12.4%	28.5%	16.6%	23.7%	6.0%	12.9%	1.94	1.46	435
Powdered Milk	3.9%	9.9%	12.4%	22.3%	9.7%	41.8%	1.21	1.31	435
Cheese	1.1%	6.7%	6.0%	11.7%	14.0%	60.5%	0.68	1.02	435
Butter	1.4%	6.9%	7.1%	18.2%	17.2%	49.2%	0.89	1.08	435
Ice Cream	8.7%	25.1%	14.9%	12.4%	10.6%	28.3%	1.49	1.47	435
Yogurt	2.5%	11.7%	10.6%	9.4%	12.9%	52.9%	0.89	1.20	435

Table 4 shows the various store characteristics that influence consumers' decision on where to purchase dairy products. Based on the mean values, cleanliness of the store, convenient location and the availability of higher quality dairy products appear to be the

three most important characteristics influencing where consumers purchase their dairy products. The opportunity to socialize was least influential.

Table 4:

Factors influencing retail outlet where dairy products are purchased

Factor	0 = Strongly not influential	1= Not influential	2= Somewhat not influential	3= Neither	4= Somewhat influential	5= Influential	6= Strongly influential	Mean	Std. Dev.	N
Cleanliness of store	3.9%	3.9%	3.0%	3.0%	13.6%	27.1%	45.5%	4.82	1.60	435
Convenient location	3.9%	5.5%	2.3%	3.2%	14.7%	32.6%	37.7%	4.68	1.62	435
Availability of higher quality products	5.5%	4.1%	3.0%	3.9%	13.6%	33.1%	36.8%	4.62	1.68	435
Product variety& availability	5.3%	6.9%	4.6%	5.3%	18.4%	35.2%	24.4%	4.28	1.72	435
Knowledgeable staff	7.1%	6.4%	5.1%	8.5%	19.3%	25.5%	28%	4.15	1.84	435
Good reputation	6.4%	9.9%	5.5%	6.4%	20.4%	27.4%	23.9%	4.02	1.86	435
Speed, efficient shopping experience	7.8%	9.2%	4.6%	5.1%	20.7%	31.3%	21.4%	4.01	1.87	435
Social opportunities	10.1%	13.3%	7.6%	14.3%	20.2%	20.7%	13.8%	3.38	1.91	435

Consumers were also asked to rate the importance (influence) of 16 different factors when purchasing dairy products. Considering the mean values displayed in Table 5, information displayed on the label, perceived health benefits gained and *Halal*-certified are the most influential factors. Quality certifications by an international agency and brand are also considered to be "somewhat influential" to respondents when purchasing dairy products.

Table 5:

Factors influencing consumers' dairy product purchasing behaviour

Variables	0 = Strongly not influential	1 = Not influential	2 = Somewhat not influential	3= Neither	4 = Somewhat influential	5= Influential	6 = Strongly influential	Mean	Std. Dev.	N
Household necessity	13.8%	11.3%	6.2%	5.7%	14.3%	23.7%	25.1%	3.67	2.16	435
Product price	6.4%	13.3%	10.8%	6.2%	21.1%	24.1%	17.9%	3.66	1.89	435
Milk brand	6.9%	9.0%	4.8%	5.3%	14.9%	37.0%	22.1%	4.12	1.84	435
Packaging	5.3%	11.7%	7.4%	8.5%	21.4%	29.0%	16.8%	3.83	1.79	435
Health benefits	5.7%	5.3%	4.4%	4.4%	16.1%	29.2%	34.9%	4.47	1.76	435
Locally produced	7.8%	9.4%	7.1%	7.4%	21.4%	26.4%	20.5%	3.86	1.88	435
Imported	9.2%	15.2%	8.7%	10.6%	20.5%	24.8%	11.0%	3.37	1.90	435
Complete label information	4.8%	6.0%	4.4%	4.4%	8.7%	26.4%	45.3%	4.67	1.78	435
Milk location	6.4%	12.0%	5.5%	8.7%	17.2%	24.8%	25.3%	3.94	1.92	435
Affordable	6.2%	8.5%	8.3%	6.9%	24.6%	24.4%	21.1%	3.93	1.80	435
Frequently advertised	8.0%	13.1%	6.4%	10.8%	21.6%	21.1%	18.9%	3.64	1.92	435
Company marketing package	9.0%	12.0%	4.8%	10.8%	22.8%	26.9%	13.1%	3.58	1.88	435
Quality verified by international agency	5.8%	7.1%	6.5%	6.9%	20.0%	23.7%	30.0%	4.19	1.82	435
Family or friends influence	7.1%	12.9%	7.1%	11.7%	23.0%	23.9%	14.3%	3.59	1.83	435
Social status	10.3%	16.6%	8.3%	12.4%	22.5%	19.5%	10.3%	3.20	1.89	435
Embedded with Halal logo	9.9%	6.9%	3.2%	5.5%	8.0%	16.6%	49.9%	4.44	2.09	435

Respondents also indicated how strongly they agreed or disagreed with several statements revealing their perceptions of fluid milk. Considering the mean level of agreement for each statement (Table 6), it appears that consumers generally agreed that fluid milk is easy to purchase, durable, a good source of protein, calcium and vitamins and healthy.

Table 6:

Consumers' perceptions of fluid milk

Fresh milk is…	0 = Strongly disagree	1= Disagree	2= Somewhat disagree	3= Neither	4= Somewhat agree	5 = Agree	6= Strongly agree	Mean	Std. Dev.	N
More environmentally friendly	3.0%	10.3%	4.8%	13.8%	21.8%	32.9%	13.3%	3.93	1.61	435
Necessary in my diet	2.1%	10.1%	5.7%	14.0%	23.7%	33.3%	11.0%	3.91	1.54	435
Cheaper, less expensive	4.4%	9.4%	8.7%	12.9%	21.8%	31.0%	11.7%	3.78	1.66	435
Feels good in the mouth	4.1%	13.6%	9.9%	16.1%	19.1%	27.6%	9.7%	3.54	1.7	435
A good source of vitamins	2.1%	4.1%	4.1%	9.7%	16.1%	43.2%	20.7%	4.46	1.42	435

Table 6 (continue):

Consumers' perceptions of fluid milk

Fresh milk is…	0 = Strongly disagree	1= Disagree	2= Somewhat disagree	3= Neither	4= Somewhat agree	5 = Agree	6= Strongly agree	Mean	Std. Dev.	N
Hard to digest	8.3%	15.9%	7.8%	18.4%	18.2%	23.0%	8.5%	3.25	1.8	435
Convenient to drink	1.8%	7.4%	4.4%	8.7%	14.3%	45.3%	18.2%	4.35	1.51	435
Genetically modified	3.0%	7.8%	5.3%	15.6%	20.2%	37.5%	10.6%	3.97	1.53	435
Easily purchased from the shop	2.1%	2.5%	3.7%	4.8%	10.8%	51.2%	24.9%	4.73	1.32	435
Watery	10.3%	23.4%	6.9%	14.9%	19.1%	19.1%	6.2%	2.91	1.86	435
Low in cholesterol	3.2%	6.9%	4.8%	14.0%	19.3%	38.2%	13.6%	4.08	1.55	435
Higher quality	3.9%	7.4%	6.7%	12.0%	24.1%	32.0%	14.0%	3.97	1.6	435
Fresher	3.9%	12.2%	7.1%	14.9%	16.6%	33.8%	11.5%	3.75	1.7	435
Tastes better	3.2%	10.3%	6.4%	13.6%	19.5%	34.5%	12.4%	3.89	1.63	435
Healthy for me and my family	2.1%	2.3%	6.4%	12.6%	22.3%	37.2%	17.0%	4.31	1.37	435
Packaged better	1.4%	5.3%	5.3%	12.2%	18.6%	41.4%	15.9%	4.53	1.25	435
Creamy	1.4%	5.3%	5.3%	12.2%	18.6%	41.4%	15.9%	4.29	1.41	435
A good source of calcium	1.1%	2.1%	3.7%	7.4%	13.6%	50.6%	21.4%	4.68	1.22	435
Durable and long-lasting	1.8%	2.5%	3.4%	7.1%	11.7%	44.4%	29.0%	4.73	1.34	435
A good source of protein	1.8%	1.8%	3.7%	6.2%	13.6%	49.2%	23.7%	4.7	1.27	435

To understand how consumption of dairy products is changing in Malaysia, consumers were asked if they had increased their consumption of dairy products in the past three years. If consumers indicated they had increased their consumption then they were asked to indicate which products they were consuming more of over time. Interestingly, 72% of the respondents indicated "yes" they had increased their consumption of diary in the last three years. This is not surprising considering the projections discussed in the literature earlier (Prescott et al., 2002; Warr et al., 2008). The percentage of respondents indicating they had increased consumption of each of the six dairy products are displayed in Figure 1. Nearly one-third (32%) of consumers indicated they increased their consumption of fluid milk, roughly one-fifth (21%) increased consumption of powdered milk (21%), 15% increased consumption of ice-cream and approximately 10% increased consumption of yogurt, butter and cheese.

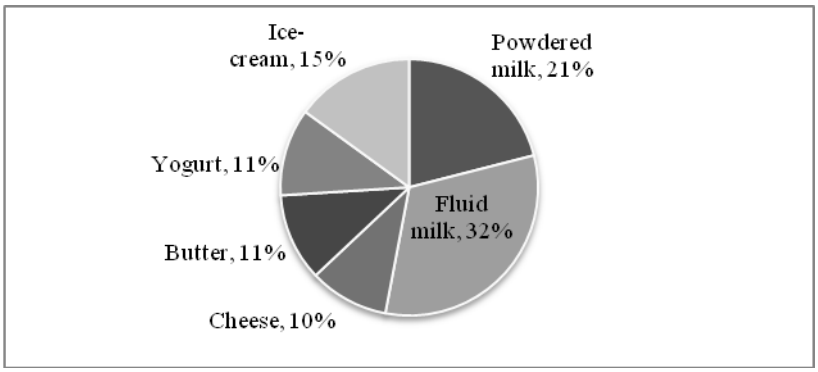

Figure 1: Share of Malaysian consumers who increased consumption of dairy products over last three years

3.3. Empirical analysis

The logit model results are shown in Table 7 and Table 8. Both of the models were significant at $\alpha = 0.01$ and with the Chi Square values equal to 45.76 and 47.21, respectively.

3.3.1 Factors influencing increased consumption of dairy products

The results of the logit estimation of Equation 2 are presented in Table 7, including estimated coefficients and marginal effects. In total, only four of the independent variables were significant in predicting consumers who were more likely to have increased their consumption of dairy products in the past three years. Two demographic variables and two factors were significant and positive: *Age, Malay, Nutrition* and *External* . As *Age* increases by one category the probability the consumer increased their consumption of dairy products in the last three years increased by 7%. Thus, older consumers in this study tend be more likely than young consumers to have increased their consumption of dairy products. This outcome is consistent with previous dairy consumption behaviour research by Bus and Worsley (2003), Jensen et al. (1992), Robb et al. (2007).

With respect to ethnicity, *Malay* was significant at the $\alpha = 0.05$ level and based on the marginal effects, consumers who were Malay in ethnicity were 11% more likely to have increased their consumption of dairy products in the last three years than consumers from other ethnic backgrounds. The result suggests that Malays, the largest ethnic category in Malaysia, are changing their lifestyles toward healthy and nutritional food. This finding is supported by Quah and Tan (2010) who found that Malay and Chinese were highly concerned with the healthiness and nutrition of their food.

Table 7:

Estimated coefficients and marginal effects for equation estimating the probability consumers increased their consumption of dairy products

Variable	Coefficient	Std. Error	Marginal Effects	Std. Error	z	P>z
Highedu	-0.46	0.32	-0.09	0.07	-1.35	0.18
Age	0.36	0.12	0.07	0.02	3.03***	0.00
Wchild	0.23	0.26	0.04	0.05	0.91	0.36
Female	0.14	0.24	0.03	0.05	0.57	0.57
Chinese	-0.36	0.33	-0.07	0.07	-1.03	0.30
Malay	0.63	0.28	0.11	0.05	2.43**	0.02
Income	0.18	0.13	0.03	0.02	1.38	0.17
Elderly	0.15	0.15	0.03	0.03	1.03	0.30
Nutrition	0.22	0.12	0.04	0.02	1.82*	0.07
External	0.26	0.14	0.05	0.03	1.88*	0.06
DairyNegative	-0.04	0.12	-0.01	0.02	-0.34	0.73
Packaging	-0.14	0.14	-0.03	0.03	-1.04	0.30
Constant	0.22	0.27				
Number of obs	=	435				
LR chi2(12)	=	45.76				
Prob> chi2	=	0.00				
Pseudo R2	=	0.09				
Log likelihood	=	-233.33				

Notes: *** significant at 0.01, ** significant at 0.05, * significant at 0.10

The variables *Nutrition* and *External* were both significant at $\alpha = 0.10$ level and carry the expected positive sign. The *Nutrition* factor is composed of respondents' level of agreement with statements such as 'dairy products are a good source of nutrients' and 'a good source of protein.' Considering the marginal effect, consumers who perceive dairy products to be a good source of nutrients are 4% more likely to have increased their consumption of diary in the last three years. This finding suggests that Malaysian consumers are well aware of the health benefits and nutrition gained in consuming dairy products and this awareness is positively impacting their consumption of dairy. This finding is positive considering several researchers emphasize the vital roles of dairy

products in sustaining health and reducing the risk of critical health problems such as breast cancer and osteoporosis (Heaney, 2000; McGill et al., 2008; Wang, et al, 2008).

The factor *External* was derived from statements related to the influence of family or friends, social status and embedded with *halal* logo on dairy consumption. Based on the marginal effect, consumers who believe that their decision to consume dairy products is influenced by these external factors are 5% more likely to have increased dairy product consumption in the last three years. Other studies also found Malaysian consumers' food consumption decisions to be very much influenced by their peers and family (Kamaruddin & Mokhlis, 2003; Quah & Tan, 2011). Furthermore, Quah and Tan (2011) explain that some consumers tend to buy organic food for their sick family member or friends. The outcome further indicates that family and friends play a significant role in influencing dairy consumption.

3.3.2 Factors influencing increased consumption of fluid milk

An additional objective of the research was to understand consumer perceptions of buying fresh milk. It is important to note that in Malaysia, "fresh milk" is used to describe fluid milk that can either be pasteurized or UHT (long-life) milk. Often it is not clear to consumers whether the milk is UHT or pasteurized, yet the shelf-life for UHT milk is relatively long compared to pasteurized milk. Focus groups and pre-testing of the questionnaire revealed consumers were generally unaware of the differences and therefore the term fluid milk is used. Equation 3 was estimated using a logit model to investigate the factors which help explain the probability that a consumer increased their consumption of fluid milk in the past three years.

The results of the logit estimation are shown in Table 8. Interestingly the same independent variables that were significant in explaining the probability consumers increased their consumption of dairy were also significant in this estimation. However, in all cases the marginal effects are larger. As age increases by one category, the probability a consumer increased their consumption of milk increases by 9%. Consumers who are Malay in ethnicity are 13% more likely to have increased their consumption of fluid milk in the past three years.

Table 8:

Estimated coefficients and marginal effects for equation estimating the probability consumers increased their consumption of fluid milk

Variable	Coefficient	Std. Error	Marginal Effects	Std. Error	z	P>z
Highedu	-0.19	0.31	-0.05	0.08	-0.62	0.53
Age	0.35	0.10	0.09	0.02	3.45***	0.00
Wchild	0.23	0.23	0.06	0.05	1.04	0.30
Female	-0.01	0.22	0.00	0.05	-0.06	0.95
Chinese	-0.26	0.33	-0.06	0.08	-0.77	0.44
Malay	0.56	0.25	0.13	0.06	2.36**	0.02
Income	0.04	0.11	0.01	0.03	0.33	0.74
Elderly	0.08	0.13	0.02	0.03	0.65	0.52
Nutrition	0.24	0.12	0.06	0.03	1.98**	0.05
External	0.24	0.11	0.06	0.03	2.13**	0.03
DairyNegative	0.38	0.40	0.09	0.10	0.95	0.34
NegativeMilk	-0.59	0.41	-0.14	0.10	-1.43	0.15
FluidMilkExpense	0.10	0.08	0.02	0.02	1.32	0.19
Constant	-0.69	0.41				
Number of obs	=	435				
LR chi2(13)	=	47.21				
Prob> chi2	=	0				
Pseudo R2	=	0.08				
Log likelihood	=	-273.62				

Notes: *** significant at 0.01, ** significant at 0.05, * significant at 0.10

The significance of the *Nutrition* and *External* variables indicate that consumers who believe fluid milk is a good source of nutrition and who are more influenced by external factors such as family and friends are 6% and 9% more likely to have increased their consumption of fluid in the last three years. The results indicate that both *Nutrition* and *External* factors play an important role in influencing consumers' decision to buy dairy products, particularly fluid milk. The outcomes also indicate that Malaysian consumers are very well aware of the fluid milk nutrition and health benefits.

4. Conclusions and Implications

The objectives of the study were (1) to explore Malaysian consumers' purchasing patterns, perceptions of and preferences for various types of dairy products; (2) to determine the relative importance of various product attributes and information to Malaysian consumers when purchasing dairy products; and (3) to investigate factors influencing Malaysian consumers increasing demand for dairy products and fluid milk. The results support the findings of researchers that suggest demand for dairy products will continue to increase and supersede domestic milk supplies. Fluid milk, ice cream and powdered milk are consumed most frequently by respondents. The largest share of respondents indicated they had increased their consumption of fluid milk (32%) and powdered milk (21%) in the last three years, but only 10% of consumers indicated increasing their consumption of cheese. Modern retail outlets such as supermarket were the main destination to buy dairy products which were influence by the cleanliness, convenient location and availability of higher quality products. Reardon et al., (2003) argue that the rise of supermarkets especially in Asia will be a great challenge and opportunities for local farmers and fresh food suppliers to be part of the "supermarket-oriented" supply chain. The outcomes of this study give some insight of the possibility for local producers to be integrated with the modern retailers.

There are several implications of this study. Modern retailers such as supermarkets may have an advantage of promoting dairy products compared to traditional retailer. Particularly given that they have the advantages of cold storage facilities to stored fresh milk. Processors and producers, for example Sabah producers who are currently producing high milk yields, may consider developing collaborative partnerships with modern retailers, particularly those who want to sell local and fresh milk. To promote their products, milk processors should consider marketing strategies which involve influential factors such as the nutritional quality of the dairy products. They may also try to increase the social status of dairy product consumption using key influencers such as family and friends.

As for the policy implications, considering the influence of external factors, it seems that the government health educational programs such as school milk program should be continued, which in turn are likely to help increase the development of the dairy industry. Considering that consumers generally prefer purchasing dairy products at modern retailers the Government should consider ways to facilitate supply chain coordination between retailers and domestic dairy processers in order to help grow the domestic industry.

The limitations of this research should be considered when interpreting the results and developing further research on understanding Malaysian consumer's perceptions and consumption of dairy products. The first limitation is that this study was done only in the urban city of Kota Kinabalu, Sabah. Expanding the study to include other cities and rural areas may present a more representative overview of the factors influencing change in Malaysian consumers' consumption of dairy products. Furthermore, fluid milk supplies in the supermarket consist of both pasteurized milk and UHT milk. Research on consumers' perceptions of different types of fluid milk, as well as the importance of shelf life, may give some new insight which will aid in domestic dairy industry development and motivate innovation in the Malaysian dairy industry.

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CHAPTER 8: Discussion and summary

Studies aimed at increasing Malaysia's dairy industry performance have traditionally focused on farm production and husbandry management. This thesis investigates the importance of Relationship Marketing (RM) as discussed in each of the preceding chapters and has been to continually improve supply chain management and contribute significantly to operational efficiency. Researchers, including Batt (2008), Crosby (1990), Hunt and Lambe (2000), and Morgan and Hunt (1994) have acknowledged the contribution of RM in many agricultural industries and in different countries.

This thesis examines the role of RM and its outcomes for Malaysia's dairy industry with four chapters focusing on: (1) the role of long-term relationships; (2) the importance of building producer loyalty; (3) understanding the dimensions of price satisfaction and its influence on loyalty and business performance; and (4) producer segmentation, based on relationships and demographic variables. A fifth chapter provides insights into consumers' behaviour, highlighting the viability of Malaysia's dairy industry and its potential for future growth and development.

Dairy businesses face difficult challenges in tropical countries like Malaysia and require constant commitment and relentless attention. They demand sound technical knowledge on what to feed the animals to ensure quality and milk yield improvement, and when to breed and how to genetically enhance the stock. Equally important are business skills and supply chain management expertise to reduce production costs, maximize profit and sustain the chain. Thus, production and husbandry management is relevant, as is a better understanding of the role of supply chain management in general and the role of RM in particular.

Targeted investment and expertise are required to maintain dairy industry business operation in Malaysia with the ever increasing cost of fertilizers and animal feed. Despite the government extension assistance, training and milk subsidies, producers are only able to keep pace with the escalating demand for milk, maintaining about 5% of the domestic milk market.

One approach to improving dairy industry performance is to scrutinize the supply chain flow and encourage collaboration along the chain (Boniface, Silip, & Ahmad, 2007; Boniface, Gyau, & Stringer, 2009; Boniface, 2011). For example, by promoting quality and sustainable relationships as discussed in this study which highlights the importance of RM in the agri-food industry. Consistent with Fischer and Hartmann's (2010) argument, the presence of close and personal relationships between actors in the supply chain contributes many benefits and promotes efficient supply chain management.

8.1 The buyer-seller relationship in Malaysia's dairy industry

This research stresses the role of close and sustainable relationships between buyers and sellers in Malaysia's dairy enterprise as being vital to the future success of the industry. Four chapters have been presented that discuss producers' wants, needs and preferences. The findings suggest that milk buyers should build closer and long-term relationships with producers by fostering relational values including trust, commitment and loyalty.

8.1.1 The nature of long-term relationships in Malaysia's dairy industry

As presented in Chapter 3 (Figure 3.1), Malaysia's dairy supply chain consists of the producers, milk buyers including the Milk Collecting Centre (MCC), processors, agents, and, at the end of the chain, the consumers. The main actors within the supply chain that interact with the consumers and the producers are the buyers and their access to supplies at the required time depends on their influence and coordination with producers. However, with small numbers of producers and an ever increasing number of milk buyers, the dairy market has become much more competitive. One way for milk buyers to compete in this industry is by gaining a competitive advantage through relationship marketing strategies (Hennig-Thurau & Hansen, 2000; Hunt & Lambe 2000). Competitive advantage could be created through promoting relationship quality and long-term relationships.

This thesis identifies commitment and loyalty as the essential measures of long-term relationships. Considering the nature of the dairy business and rising milk demand, these two relational variables are considered to be highly relevant (Morgan & Hunt, 1994). In order to understand the building of long-term relationships, structural equation modelling (SEM) was used to analyse the data from a survey of 133 dairy producers in Malaysia, revealing that timely communication, goal mutuality and price satisfaction influenced the

quality of producers' relationships. This outcome indicates that by practising good communication, promoting mutual goals and offering price satisfaction, milk buyers should be able to develop quality relationships with producers.

Two other relational variables, namely a high degree of dependency and power exploitation, were found not to influence relationship quality. The MCC is the main buyer in Malaysia's dairy industry as they buy a high volume of milk from producers at a predetermined price. Therefore, in the presence of a powerful buyer, the author proposes the idea that a high degree of dependency and possible power exploitation may influence relationship quality and long-term relationships (Heide, 1994; Batt, 2003). It is also postulated that increasing the number of milk buyers may reduce the degree of producers' dependency on their buyers and avoid significant power exploitation by the buyers.

8.1.2 The importance of building supplier loyalty

Chapter 4 addressed the importance of building supplier loyalty, especially in an emerging economy and from an empirical perspective; it identified how Malaysian milk buyers can build a loyal supplier as a means to secure uninterrupted milk supplies. From an agribusiness perspective, this study defines business customers as suppliers and discusses the consequences and implications of having a loyal supplier in the agricultural industry. It was also found that loyalty improved financial and non-financial business performance (Chapter 5).

The determinants of loyalty were constructed from trust, which consists of contractual trust and competence-goodwill trust (Sako, 1997). The SEM analysis indicated that collaborative communication, cultural similarity and price satisfaction influenced contractual trust and competence-goodwill trust, while only power dependency negatively influenced competence-goodwill trust. Collaborative communication is perceived as an effective tool to improve buyer and seller relationships (Prahinski & Benton, 2004) and in this study it built producers' trust in their buyers.

Culture is highly relevant to Malaysia for the country consists of different races, cultures and religions. For instance, in the state where most of the producers are Indians, the MCC officer who is in charge is also an Indian, a strategy influencing producers' trust in the collection group. Similarly, offering a better price shows that the buyer knows what the

producers want and how they are likely to be satisfied. Chapters 3 and 4 indicated that price satisfaction in Malaysia's dairy industry is essential; in Chapter 5 the dimensions of price satisfaction were explored.

8.1.3 Linking price satisfaction and business performance

Batt (2004) argues that long-term relationships may not be enough to provide price certainty, and in searching for a better and reasonable price, suppliers may abandon their exchange partners. This research indicates that price satisfaction is a multi-dimensional construct consisting of price fairness, relative price, price-quality ratio, reliability and transparency.

In this study it was found in Malaysia's dairy industry that relative price, price-quality ratio and price fairness significantly influenced producers' loyalty. Relative price exists when producers start to compare the price of their product with other buyers (Matzler et al., 2007) and if producers consider that the price offered is better than that of other buyers then they feel satisfied. As for price-quality ratio, producers expect that the buyers will offer an acceptable price based on milk quality and if the price is fair and reflects that, then the producers feel satisfied and will continue to sell to the same buyer.

In Chapter 5 it was shown that loyalty improved both financial and non-financial business performance. Malaysia's dairy producers receive a number of incentives such as veterinary services, marketing assistance, milk price and animal feed subsidies from the government (Author's survey, 2009). The incentives are related to financial performance and in many ways they have improved the industry, but they are not enough to provide essential satisfaction for producers to stay in the business. Non-financial performance such as quality relationships and satisfaction capture the other dimensions of business performance, which need to be taken into account if performance is to be viewed from financial and non-financial perspectives (O'Toole & Donaldson, 2000).

8.1.4 Producer relationship segmentation

Chapter 6 showed that producers are heterogeneous rather than homogenous. Much earlier research has acknowledged this by looking at the economic characteristics and management profiles of producers (Espinoza-Ortega, Espinosa-Ayala, Bastida-López, Castañeda-Martínez, & Arriaga-Jordán, 2007; Rosenberg & Turvey, 1991). However,

since research on buyer and seller relationships in the agri-food industry is relatively new, this investigation took the essential step of exploring producer relationship segmentation.

This research revealed two distinct groups in Malaysia's dairy industry. The first group was the Relationship Group (RG) and the second group, the Market Driven Group (MDG). The RG made up 78% of the sample and were predominantly small-scale producers with incomes around MYR 4,000 monthly, while the MDG earned around MYR 10,000 monthly and consisted of large-scale producers. In terms of experience, MDG members had more years in the business compared to RG members.

Both groups also differed in terms of their perception of their relationship with their buyers. The RG was likely to engage in a long-term relationship with their current buyers and had high degrees of trust and satisfaction with their buyers. They were also loyal and committed to their main buyers. In terms of price satisfaction, they were responsive to price reliability, fairness and transparency. As for the MDG, they were committed to their buyers but easily exchanged buyers when offered a more reliable and transparent milk price. The MDG were responsive to market price and had considerable experience in the dairy business.

Chapter 6 indicated that Malaysia's dairy producers are not the same, especially in their perception of their relationship with their buyers, which underpins the importance of buyers formulating an adequate marketing strategy to producers based on their relationship and demographic characteristics.

8.1.5 Factors influencing consumer consumption of dairy products in Malaysia

Realizing the importance of examining the supply chain flow, it was necessary in this study to look at consumers' consumption patterns and the viability of fresh milk compared to other dairy products.

Chapter 7 explored the buying patterns and preferences for dairy products of 435 respondents. The results indicated that demand for dairy products will continue to increase, in particular the demand for fresh milk, powdered milk and ice-cream. Over the past three years, 32% of the consumers increased their consumption of fresh milk, followed by a 21% increase in powdered milk consumption.

A logit regression model found that the probability of a Malaysian consumer increasing their consumption of dairy products was influenced by two factors: nutrition and external factors. Two demographic variables were also significant in influencing consumers' decisions to increase consumption: (1) increasing age; and (2) ethnicity (Malay as the dummy variable). The nutrition factor related to consumer perception of dairy products providing health benefits and the external factor consisted of statements such as 'consuming dairy products is regarded as high social status' and 'dairy product embedded with *halal* logo'. Another logit regression model identified the probability of a consumer buying fresh milk compared to other dairy products and found four significant variables: (1) increasing age; (2) ethnicity (Malay as dummy variable); (3) nutrition factors; and (4) external factors. These outcomes could be used for marketing purposes and policy formulation.

8.2 Managerial and policy implications

Each of the chapters of this thesis features some managerial implications for the dairy industry. This section provides a detailed explanation of these.

8.2.1 Harvesting long-term relationships and building producer loyalty

Building a relationship takes time and requires constant communication between two parties. In the case of Malaysia's dairy industry, inappropriate communication and practising different goals may jeopardize quality relationships. It is, therefore, in this sense that milk buyers need to be aware and pay more attention to how they deal with producers.

The survey identified that some producers had complaints about the time of payment, milk quality analysis (which had been done at a different site), biased breed distribution among producers (especially by the Department of Veterinary Services through the MCC as the main buyer) and inconsistent times for veterinary service visits. They communicated these complaints not only to the buyers, but also among the producers. A variety of information and knowledge may be transmitted during such interactions, some of which may not be true. For instance, in one state where the milk sufficiency level is high, the producers were informed by unreliable sources that some of their milk was thrown into the drain due to lack of storages facilities. This information caused a souring of the relationships between the buyers and some producers. If, however, they were to practise constant and open

communication, milk buyers would be able to consolidate and share correct information and knowledge to better avoid unnecessary conflict and misunderstanding (Author Survey,2009).

Over time, proper and timely communication promotes goal mutuality and quality relationships (Batt, 2003; Gyau & Spiller, 2010). As stated in Chapter 3, these relational norms are likely to result in better relationship quality outcomes, enabling producers to become more committed and loyal. A loyal producer provides many benefits, especially in an emerging economy with scarce resources. This new stability should provide opportunities for buyers to plan their input supplies and reduce costs associated with searching for alternative producers. Looking at the broader supply chain management, milk buyers not only have to sustain uninterrupted milk supplies but also have to make sure that the supplies reach their consumers on time. Therefore, by having loyal producers, they secure milk supplies as well as keeping their promises to consumers.

8.2.2 How relevant are the price satisfaction dimensions in the dairy industry?

In any agri-food industry, price has always been the foundation of an interaction. One of the main goals of producers is to achieve a better and reasonable price. Yet, in Malaysia's dairy industry, most of the producers sell their milk to the MCC at predetermined prices and only a few sell directly to milk processors. They also keep a small portion of milk for other milk buyers such as milk agents, restaurants or even direct consumers. In actuality, milk prices offered by milk buyers are not relatively different but vary in terms of milk quality and price formulation. In the presence of a semi-stagnant price, this study proposes a price satisfaction approach.

The price satisfaction approach further illuminates the dimensions of price satisfaction. The results of this study indicated that price satisfaction is not only generated from the absolute prices that the producers are paid but includes the psychological aspect of the whole exchange system such as relative price, price quality and fairness. With the same price, milk buyers are able to satisfy producers by offering other factors related to price and in Chapter 5 some examples were given of the producers' concern with price satisfaction. Some said that they felt satisfied when milk buyers came and bought a large amount of milk (considering the perishable nature of milk), while others wanted to be able to select to whom they sold their milk yields.

Therefore, by understanding the related dimensions of price satisfaction in the industry, milk buyers will be able to capture producers' satisfaction with price and avoid switching behaviour. This could enhance supply chain management, as price asymmetry could be reduced at the same time; transaction costs, such as the cost of searching for new milk supplies, of drafting new agreements and of logistic investment could also be reduced.

8.2.3 Promoting integrated business performance

Another important implication of this study relates to integrated business performance. This study conceptualizes business performance as non-financial and financial performance (O'Toole & Donaldson, 2000). Financial performance closely relates to economic rewards such as return on investment, cost sharing and long-term profitability, while non-financial performance is the outcome of mutual interest, trust and satisfaction in relationships. It was found that most producers entered the business due to economic rewards and motivation. However, producer motivation to stay longer in a relationship could come from non-financial performance elements such as trust and satisfaction.

One producer recalled that in the past the MCC came and collected milk at his farm, but not anymore. For him, the idea of coming to his farm was a sign of recognition and appreciation that the MCC cared for him and really wanted to help him. Presently, he has to send his milk to the MCC (Author's survey, 2009). This example is just one of the complaints received from producers. If the milk buyers could become aware of these complaints and respond to them, the author believes most of the producers would remain with the same buyer and improve business performance.

8.2.4 Consumer research and policy formulation

Chapter 7 called attention to essential information about factors that influenced consumer consumption of dairy products and what motivated them to choose milk compared to other dairy products. It also suggested some managerial implications of these results. One of the very relevant implications is the opportunity to take advantage of the rising number of modern retail chains.

It is recommended that the government should encourage integrated milk supplies into the modern retail sector either through dairy cooperatives or associations, which would create

multiple channel choices for local producers rather than one dominant supply chain channel (Chapter 4). For example, Reardon et al. (2003) argue that the rise of supermarkets, especially in Asia, will be a great challenge and opportunity for local farmers and fresh food suppliers to be part of the "supermarket-oriented "supply chain. The outcomes of the present study give some insight into the possibility for local producers to be integrated with modern retailers.

8.3 Knowledge contribution to the body of literature

In an emerging economy, having closer relationships between actors in the supply chain promotes efficiency and sustainable outcomes. This study, apart from contributing to an understanding of the nature of buyer and seller relationships in Malaysia's dairy industry, also contributes significantly to the body of relationship marketing and agribusiness literature.

First, a conceptual model that describes long-term relationships in Malaysia's dairy industry has been developed followed by discussion regarding supplier loyalty, which is the mirror reflection of customer loyalty. This inquiry has further developed the dimensions of price satisfaction which consist of price-quality ratio, price reliability, price fairness, price transparency and relative price (Chapter 5). This thesis has outlined the importance of having loyal suppliers and one of the many ways to gain suppliers' loyalty in agribusiness settings is by offering a reasonable and satisfying price. Next, the producer relationship attributes have been characterized as producer loyalty, satisfaction, relationship commitment and also price satisfaction dimensions, to gain insight into relationship segmentation (Chapter 6). Finally, this study has explored consumers' perceptions of and preferences for dairy products as a category in contrast to most studies which explore consumers' behaviour only towards individual dairy products (Chapter 7).

8.4 Directions for future research

The outcomes of this research should be seen within the context of limitations which could stimulate further research. In the light of the time factor and financial constraints of the present study, along with data limitations, the proposals for future research are listed below.

Only dairy producers were interviewed for this study. To capture the whole concept of relationship quality, interviewing milk buyers may illuminate other aspects of long-term relationships. The milk buyers may have different motivations and perceptions of price satisfaction and determinants of long-term relationships. The triangulation of such data may give some new insights into buyer and seller relationships.

Secondly, trust is a dynamic concept. Batt (2003) explains that interaction experience between both parties in a relationship over time influences trust. He notes, "as the exchange partners became increasingly familiar with one another, the growers' experience suggested that at some point in time, market agents would take advantage of them" (Batt, 2003, p.74). Batt (2003) argues that the longer the growers and preferred market agents interacted with or knew each other, the more the level of trust between exchange partners decreased. In the present study, time did not permit the pursuit of data to investigate how the relational variables evolved. There might be instances when trust is exploited by either partner due to specific circumstances. For instance, Malaysia is multi-cultural, with many festival seasons such as Chinese New Year, Hari Raya, Indian festivals and even the Christmas season. During these festive events, demands are extraordinarily high, and many "one-off" buyers suddenly appear with better prices. In this scenario, will suppliers' trust in the buyers be influenced by external factors such as festivals?

Finally, this study investigated loyalty as a composite measure, but some researchers argue that loyalty can be measured from many aspects. For example, Rundle-Thiele (2005) states that loyalty can be measured from five loyalty qualities: (1) attitudinal loyalty; (2) behavioural loyalty; (3) behavioural intentions; (4) resistance to competing offers; (4) propensity to be loyal; and (5) complaining behaviour. By capturing multiple dimensions of loyalty in future studies, we may further understand why producers stay in a relationship. For instance, they may be loyal to the buyers because they do not have any other choice of buyers. This type of loyalty is called "complaining behaviour". By knowing the types of suppliers' loyalty, buyers could develop adequate strategies, as producers may exhibit or possess different degrees of loyalty across the different types of loyalty (Rundle-Thiele, 2005).

It is projected that Malaysia's dairy industry will grow and develop at a steady rate and will continue to benefit from the government's immense investment and research efforts.

The development in the dairy industry is closely aligned to the Ninth and Tenth Malaysian Plans.

This investigation suggests that improvement can be aided by focusing on supply chain management efficiency. Similarly, the research explores in detail the outcomes and consequences of buyer and seller relationships and how to build on RM to improve supply chain management and promote sustainable business outcomes.

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APPENDICES

Appendix 8.1: Dairy producers' questionnaires

Soalselidik Penternak Tenusu

Dairy Producer Survey

Tuan/Puan

Kami menjemput tuan/puan untuk menyertai kajian kualiti hubungan di antara pengeluar (penternak) dengan pengilang tenusu Malaysia.

Bersama surat ini ialah soalselidik yang mengandungi pelbagai soalan berkenaan dengan operasi perniagaan anda dan hubungan anda dengan pengilang anda di Malaysia. Kesudian tuan/puan melengkapkan soalseldiki ini amat saya hargai. Soalselidik ini akan mengambil masa lebih kurang 45 minit untuk dilengkapkan.

Melalui penyertaan anda, kami akan dapat memahami beberapa isu berkenaan dengan kualiti hubungan perniagaan anda dengan pembeli hasil susu anda di Malaysia. Hasil kajian ini membolehkan kami mencadangkan beberapa strategi dan maklumat pasaran yang mampu mengukuhkan hubungan perniagaan dengan pembeli tuan/puan serta mencadangkan polisi tenusu yang bersesuaian kepada kerajaan.

Kami menjamin bahawa tidak ada risiko untuk terlibat dalam kajian ini malah kami memberi jaminan bahawa setiap maklumat yang diberikan adalah rahsia. Kami tidak akan menyebarkan apa-apa maklumat yang mengenalpasti tuan/puan sebagai responden selain daripada saya,

Sekiranya tuan/puan mempunyai sebarang pertanyaan ketika melengkapkan soalselidik ini sila berhubung dengan kami.

Yang ikhlas,

Prof. Randy Stringer , Dr. Wendy Umberger, Dr.Amos Gyau and Bonaventure Boniface

Nama Syarikat *Name of firm*			
Kod Syarikat *Firm Identification*	(Sila rujuk kod syarikat/ *Refer to the firm Code*)		
Nama Penemuduga *Interviewer name*			
	Tarikh/*Date* :	Masa/*Time* :	Tandatangan/ *Signature:*
Masa temuduga/ *Interview time*		Dari/ Hingga/From: to:	
Semakan /*Office Check*		Dari/ Hingga/ From: to:	
Masuk Data/*Data entry*		Dari/ Hingga/ From: to:	

Bahagian A: Perincian Pemilik dan Syarikat

Section A: Firm and Owner Details

Soalan berikut berkaitan dengan latarbelakang perniagaan tenusu anda. Sila nyatakan jawapan anda di tempat yang disediakan. Sila gunakan kertas tambahan sekiranya ruangan tidak mencukupi.

The following questions relate to your background in the dairy farm business. Provide your answers in the spaces provided. Use supplementary sheets if the spaces provided are not enough.

PERINCIAN PEMILIK:

OWNER DETAILS:

1. Sila nyatakan umur anda/ *Please state your age* : _____
2. Sila nyatakan jantina anda/*Please state your gender* : _____ (L/P *M/F*)
3. Bilangan ahli keluarga/ *Number of family members* : _____ (termasuk isteri/*including your wife*)
4. Tahap pendidikan/*Education level* : _____ (rujuk kod pendidikan/*refer to the education code*)
5. Berapa banyak perniagaan yang anda terlibat? *How many agri-business' do you involve in*? _____ (sekiranya lebih dari satu sila terus ke soalan 6, sekiranya hanya satu (tenusu) sila teruskan ke soalan 11/*if more than one proceed to question 6, if only one jump to question 11*)
6. Jenis perniagaan tani/ lain-lain/*Types of agricultural businesses/other* :_____ (Sila rujuk kod perniagaan/*refer to the business code*)
7. Berapa lama anda terlibat dengan perniagaan-perniagaan berkenaan? *How long have you been involve in these businesses*? _____tahun/*year/s*
8. Sila nyatakan pendapatan purata/bulan untuk setiap perniagaan (tidak termasuk pendapatan lembu tenusu) *Please state your average incomes/month for these businesses (excluding dairy incomes)* RM:_____

9. Adakah anda mempunyai kontrak dengan perniagaan berkenaan ? Ya/Tidak (sekiranya Ya, sila nyatakan jenis kontrak: *Do you have any contract with these businesses? Y/N (if yes please indicate the types of contract* : _____(Pemasaran/ Pengeluaran/Lain-lain) (*marketing / production/ others*)

10. Yang mana satu daripada perniagaan berkenaan merupakan sumber pendapatan utama anda? *Which one of these businesses is your main source of income?* _____

PERINCIAN SYARIKAT TENUSU/*DAIRY FIRM DETAILS*:

11. Berapa lama anda telah berada dalam perniagaan ini? *How long have you been in the dairy business?* _____tahun/*year/s*

12. Berapa banyak wang yang anda terima daripada kerajaan? *How much money did you receive from the government?*
    RM_____

13. Berapa banyak wang yang anda laburkan dalam perniagaan ini? *How much money did you invest to run this business?*
    RM_____

14. Adakah anda mendapat pinjaman kewangan? Ya/Tidak (sekiranya Ya, sila nyatakan jumlah pinjaman yang diterima dan tempoh pembayaran balik) *Do you receive any loan assistance? Y/N (if yes please indicate loan amount and repayment period)* Jumlah pinjaman/*Loan Amount* :RM_____

    Tempoh bayaran balik/*Repayment period* _____ bulan/*months*

15. Adakah anda mempunyai kontrak dengan kerajaan? Ya/Tidak (sekiranya Ya, sila nyatakan jenis kontrak/*Do you have any contract with the government? Y/N (if yes please indicate the types of contract* : _____ (Pemasaran/pengeluaran/lain-lain)*(marketing/ production/ others)*

16. Adakah anda menyimpan salinan kontrak berkenaan? Ya/Tidak/*Do you have the copy of the contract? Y/N* _____

17. Adakah anda memahami kandungan kontrak berkenaan? Ya/Tidak /*Do you understand your contract details? Y/N* _____

18. Apakah pendapat anda tentang kontrak kerajaan? *What is your opinion about the government contract?*

19. Sila nyatakan jumlah lembu yang diterima daripada kerajaan/*Please state number of cattle receive from government* :

_____

20. Sila lengkapkan carta di bawah yang menentukan perkembangan syarikat anda *Please fill in the chart below to indicate your firm development:*

Tahun *Year*	Pertama/ *1st year*	Kedua/ *2nd year*	Ketiga/ *3rd year*	Keempat/ *4th year*	Kelima/ *5th year*	Lebih 5 tahun/ *More than 5 years*	Terkini/ *currently*
Bil. Lembu/ *Number of cattle*							
Harga seekor/ *Price per cow*							

21. Purata pendapatan kasar/bulan/*Average gross income/month*: RM_____

22. Purata kos pengeluaran/bulan/ *Average production cost/month*: RM_____

23. Purata hasil susu/hari/ *Average milk yield per cow/day* : _____liter/*litres*

24. Apakah masalah-masalah utama yang anda hadapi semasa berurusniaga dengan pembeli anda? *What are the main problems that you face in your dealings with your buyer*?

25. Sekiranya anda diberi peluang, apakah perkara dalam kontrak yang anda rasa perlu diubah? *If you have the chance, which aspects of your contract would you like to change?*

26. Bolehkah anda nyatakan peratus pengagihan hasil susu anda secara purata? *Can you state your milk yield distribution in average percentage?*

    a) Kepada pembeli utama/*To your buyer/ contractor* : _____%

    b) Kepada pembeli lain/*To other buyer (Specify who)*:_____ _____ _____%

    c) Penggunaan sendiri/*Owned consumption* : _____%

27. Adakah anda berdaftar dengan persatuan tenusu atau kooperasi? Ya/Tidak (sekiranya tidak sila terus ke Bahagian B)/*Are you registered with any dairy association or cooperative? Y/N (if No proceed to section B)* _____

28. Apakah pendapat anda tentang peranan dan tanggungjawab persatuan atau kooperasi anda?/*What is your opinion about the roles and responsibilities of your association and cooperative?*

Bahagian B/ *Section B*

Pernyataan berikut menilai persepsi hubungan anda dengan pembeli. Sila nyatakan jawapan anda menggunakan skala berikut 1=sangat tidak setuju,2=tidak setuju, 3=tidak pasti, 4=setuju, 5=sangat setuju.

The statements below are about your perception of your relationships with your buyer. Evaluate the following statements using a scale of 1=strongly disagree, 2=disagree, 3=partly agree/disagree, 4=agree and 5= strongly agree.

1	Janji pembeli saya boleh diharap *My buyer promises are reliable*	
2	Pembeli saya sentiasa memenuhi kehendak saya *My buyer often meets my expectations*	
3	Saya berusaha bersungguh-sungguh untuk mengekalkan hubungan kami *I have maximum effort to maintain our relationship*	
4	Saya tidak boleh mempercayai pembeli saya *I cannot trust my buyer*	
5	Saya berpuashati berurusan dengan pembeli saya *I feel satisfied doing business with my buyer*	
6	Saya mahu secara tetap meneruskan hubungan perniagaan kami *I want to maintain indefinitely our relationship*	
7	Saya percaya terhadap kepakaran dan kemahiran pembeli saya *I have trust in my buyer skill and expertise in the business*	
8	Pembeli saya melayan saya dengan adil dan saksama *My buyer treat me fairly and equitably*	
9	Saya ingin memperbaiki hubungan ini dalam jangka panjang *I want to improve my relationship in long-term*	
10	Pembeli saya amat berpengetahuan dalam perniagaan tenusu *My buyer is knowledgeable in the dairy business*	

11	Kami mempunyai kerjasama yang baik dalam perniagaan ini *We have good cooperation in this business*	
12	Kami sangat komited dengan hubungan perniagaan ini *Our relationship is something that we are very committed to*	
13	Pembeli saya mengambil berat kebajikan saya *My buyer cares for my welfare*	
14	Pembeli saya cepat menguruskan aduan-aduan saya *My buyer is quick to handle my complaints*	
15	Saya sangat komited dengan pembeli saya *I feel committed to my buyer*	

Bahagian C /*Section C :* Soalan 1 hingga 4 adalah berkaitan/ *Question 1 to 4 are interrelated*

1. Pembeli anda tersenarai dalam kategori apa ? Which category does your main buyer belongs to?
   - ☐ Syarikat Awam/*Public Enterprise*
   - ☐ Syarikat Swasta/*Private company*
   - ☐ Lain-lain (sila nyatakan) *Other (Please indicate)* ----------

2. Daripada senarai di atas, golongan pembeli manakah yang anda berkenan? *Which of the above category does your most preferred buyer belongs to?*

   - ☐ Syarikat Awam/*Public Enterprise*
   - ☐ Syarikat Swasta/*Private company*
   - ☐ Lain-lain (sila nyatakan) *Other (Please indicate)* ----------

3. Mengapa anda lebih berkenan kepada pembeli tersebut? (Panduan jawapan : harga, kuantiti, boleh diharap, sokongan kewangan, dll) *Why do you prefer the buyer to all the others? (Response can be guided by: price, quantity, reliability, financial support, etc)*

4. Dalam jadual di bawah, pembeli yang anda suka berada di mana? (Sila tandakan kotak di bawah, yang menyatakan penilaian anda terhadap pembeli yang anda suka. Untuk setiap pasangan perkataan, kotak tengah mewakili penilaian tidak pasti) *Where in the table would you place your most preferred buyer?*

(Select by ticking the part of the graph/table provided below that represent your assessment of your business practices of your most preferred processor. For each pair of adjectives, the middle box represents a neutral position).

		Sangat diterima *Fully applicable*	diterima *applicable*	Tidak pasti *Partly*	diterima *applicable*	Sangat diterima *Fully applicable*	
i	Fleksibel *Flexible*						Kukuh *Stable*
ii	Terbuka *Open*						Tertutup *Close*
iii	Kerja berkumpulan *Team work*						Kerja individu *Individualistic*
iv	Berdasarkan proses *Process oriented*						Berdasarkan hasil *Results oriented*
v	Peramah *Friendly*						Tidak Peramah *Unfriendly*
vi	Boleh dipercayai *Trustworthy*						Tidak boleh dipercayai *Untrustworthy*

		Sangat diterima *Fully* *applicable*	diterima *applicable*	Tidak pasti *Partly*	diterima *applicable*	Sangat diterima *Fully* *applicable*	
vii	Kerjasama *Cooperative*						Tidak bekerjasama *Uncooperative*
viii	Ada Persaingan *Competent*						Tiada saingan *Incompetent*
ix	Boleh diharap *Reliable*						Tidak boleh diharap *Unreliable*

Bahagian D/*Section D*

Kenyataan dalam bahagian ini menilai kebolehan anda membina hubungan dengan pembeli anda. Sila tandakan jawapan anda di kotak jawapan yang bersesuaian./*The statements in this section relate to your firm's ability to build its relationship with your buyer. Answer the following questions by ticking a box that reflects your evaluation of each of the statements given below.*

		Sangat tidak setuju *Strongly disagree*	Tidak setuju *Disagree*	Tidak pasti *Partly agree/ disagree*	Setuju *Agree*	*Sangat setuju* Strongly agree
1	Pembeli saya mempunyai kepakaran teknikal yang boleh meningkatkan hasil susu *My buyer has a high technical expertise that can improve my milk yield*	□	□	□	□	□
2	Pembeli saya boleh mengubahsuai syarat kontrak bagi memenuhi keperluan terkini saya *My buyer can adjust the contract condition to fit my present requirement*	□	□	□	□	□
3	Pembeli saya sentiasa berkongsi maklumat bersama dengan saya *My buyer keep me informed regularly with one another*	□	□	□	□	□
4	Pembeli saya mempunyai kuasa mutlak ke atas pengeluaran tenusu saya *My buyer have all the power over my dairy production*	□	□	□	□	□

		Sangat tidak setuju *Strongly disagree*	Tidak setuju *Disagree*	Tidak pasti *Partly agree/ disagree*	Setuju *Agree*	*Sangat setuju* Strongly agree
5	Jika saya menghadapi masalah, pembeli saya akan memastikan masalah berkenaan tidak menggangu hubungan kontrak kami *When I have problem, my buyer will make sure the problem does not jeopardize our contract relationship*	□	□	□	□	□
6	Saya harus selalu bergantung dengan pembeli saya *I have to always rely on my buyer*	□	□	□	□	□
7	Kami berkongsi budaya kerja yang sama *We (producer and buyer) share the same work culture*	□	□	□	□	□
8	Saya tidak berhasrat untuk menerima pendapat kedua tentang pengeluaran tenusu saya yang telah disediakan oleh pembeli/ pengilang utama saya *I have no intention to get second opinion about my dairy production provided by my buyer/processor*	□	□	□	□	□
9	Saya tidak menghadapi sebarang masalah untuk berkomunikasi dengan pembeli saya *I have no problem communicate with my buyer*	□	□	□	□	□
10	Saya dan pembeli saya sentiasa berbincang dan menilai semula objektif perniagaan kami *My buyer and I always discuss and review our business objective*	□	□	□	□	□

		Sangat tidak setuju *Strongly disagree*	Tidak setuju *Disagree*	Tidak pasti *Partly agree/ disagree*	Setuju *Agree*	*Sangat setuju* Strongly agree
11	Pembeli menghormati kepercayaan dan tradisi saya *My buyer respect my belief and traditions*	□	□	□	□	□
12	Saya tidak mempunyai pilihan untuk mencari pembeli lain *I have no other alternative of buyer*	□	□	□	□	□
13	Kami (pengeluar dan pembeli) mempunyai kepentingan yang sama dalam perniagaan ini *We (producer and buyer) have mutual interest in doing this business*	□	□	□	□	□
14	Kedua-dua kami kerap membincangkan hasil yang diharapkan *Both of us frequently discuss each other's expectations*	□	□	□	□	□
15	Kami saling berkongsi maklumat antara satu sama lain *We share information regularly with one another*	□	□	□	□	□
16	Pembeli saya mengawal keseluruhan maklumat pengeluaran *My buyer control all the production information*	□	□	□	□	□

		Sangat tidak setuju *Strongly disagree*	Tidak setuju *Disagree*	Tidak pasti *Partly agree/ disagree*	Setuju *Agree*	*Sangat setuju* Strongly agree
17	Saya sentiasa dapat mencari pembeli lain untuk membeli hasil susu saya *I can always find other buyer to buy my milk yield*	□	□	□	□	□
18	Saya dan pembeli saya berkongsi matlamat yang sama *My buyer and I share similar goal*	□	□	□	□	□
19	Pembeli saya memahami cara saya melakukan perniagaan saya *My buyer understand my ways of doing my business*	□	□	□	□	□
20	Saya dan pembeli saya bekerjasama untuk mencapai matlamat yang sama *My buyer and I work closely together to achieve our mutual objective*	□	□	□	□	□
21	Pembeli saya mengetahui baka lembu yang terbaik untuk perniagaan tenusu saya *My buyer know what type of cow breed suit my dairy business*	□	□	□	□	□
22	Pembeli saya akan selalu menjemput saya untuk membuat pelan tindakan bersama-sama *My buyer will always invite me to do our action plan together*	□	□	□	□	□

Bahagian E /*Section E*

Nilaikan pengalaman anda bersama pembelu berdasarkan kepada skala berikut : Skala 0= tidak tepat hingga skala 100= sangat tepat. *Evaluate your overall experiences with your buyer in terms of the statements provided below using a scale of 0= not true at all to 100 =very true.*

		Evaluation in (%)
1	Saya setia kepada pembeli saya *I am loyal to my buyer*	
2	Saya akan mencadangkan kepada penternak lain untuk mendapatkan bantuan daripada pembeli saya *I will ask other dairy producer to seek assistance from my buyer*	
3	Pembeli saya telah memberikan bantuan teknikal dan sokongan yang terbaik *My current buyer has given me the best technical support and assistance*	
4	Pembeli telah membolehkan saya mengeluarkan hasil susu pada kos terendah *The buyer have enabled me to produce at lower cost*	
5	Saya menerima bayaran hasil susu tepat pada masanya *I received my payment on time*	
6	Saya telah berjaya mencapai 100% matlamat saya dengan menjual hasil susu kepada pembeli saya sekarang ini *I have been able to achieve 100% of my goals by selling to my current buyer*	
7	Saya mendapat pendapatan tetap dan jaminan kewangan melalui kontrak/ hubungan perniagaan ini *I gain steady income and financial security from this contract/relationship*	

		Evaluation in (%)
8	Saya tahu sebab utama mengapa bayaran hasil susu lewat dibayar *I know the main reason why my payments is late*	
9	Saya akan terus melakukan perniagaan dengan pembeli asal saya untuk beberapa tahun akan datang *I will continue to do more business with my current buyer in the next few years*	
10	Saya selalu menerima perkhidmatan dan perundingan penternakan haiwan *I receive the veterinary services and consultation regularly*	
11	Hubungan saya dengan pembeli berjaya dari segi jaminan kewangan *My relationship with the buyer has been a financial success*	
12	Pembeli terkini saya adalah sangat memudahkan daripada pembeli lain *My current buyer is much more convenience than other buyers*	
13	Pembeli saya tidak peduli dengan pengurusan kualiti ladang *My buyer does not care about farm quality management*	
14	Pembeli saya berupaya menyelesaikan masalah dengan sewajarnya *My buyer able to solve problem adequately*	
15	Hubungan saya dengan pembeli saya lebih kukuh apabila ladang saya diakreditasi dan diiktiraf dengan oleh Jabatan Haiwan, Malaysia. *My relationship with my buyer are stronger when my farm is accredited and certify by the Department of veterinary*	

		Evaluation in (%)
16	Pengurusan tenusu dan simpanan rekod yang baik amat penting untuk mempengaruhi pembeli baru dan mengekalkan pembeli lama Record keeping and good dairy management is important to influence new buyer and to retain current buyer	
17	Persijilan SALT tidak mempengaruhi keputusan pembeli untuk membeli hasil susu saya *The farm certification does not influence buyer decision to buy my milk yield*	

Section F/ Bahagian F

Sila nyatakan sama ada anda bersetuju atau tidak bersetuju dengan kenyataan di bawa. Sila tandakan jawapan anda di kotak yang disediakan.

Do you agree or disagree with the following statements? Please select the response that reflects your judgements of the statements provided below

		Sangat tidak setuju *Strongly disagree*	Tidak setuju *Disagree*	Tidak pasti *Partly agree/ disagree*	Setuju *Agree*	*Sangat setuju* Strongly agree
1	Pembeli saya menepati kesemua janjinya berkenaan dengan harga susu *My buyer keeps all promise regarding milk price*	□	□	□	□	□
2	Maklumat harga susu adalah lengkap, tepat dan telus *Milk price information is complete, correct and frank*	□	□	□	□	□
3	Saya tidak mempercayai pembeli lain yang boleh menawarkan harga susu yang sama atau yang lebih baik dari yang saya terima *I do not believe other buyer will have the same or even better milk price offer*	□	□	□	□	□
4	Saya bersetuju dengan harga susu dan sistem gred susu yang diamalkan *I agree with the milk price and grading system*	□	□	□	□	□
5	Harga susu adalah berpatutan dengan kos pengeluaran susu seliter *The milk price equivalent with the production cost per litre*	□	□	□	□	□

		Sangat tidak setuju *Strongly disagree*	Tidak setuju *Disagree*	Tidak pasti *Partly agree/ disagree*	Setuju *Agree*	*Sangat setuju* Strongly agree
6	Kami berpuashati dengan kontrak/ hubungan ini *We are satisfy with this contract/ relationship*	□	□	□	□	□
7	Sekiranya saya mempunyai pilihan pembeli lain, saya akan kekal dengan pembeli ini *If I have other alternative buyer, I will remain with this buyer*	□	□	□	□	□
8	Perubahan harga susu dimaklumkan dengan baik *Milk price changes are communicated properly*	□	□	□	□	□
9	Maklumat harga susu adalah difahami dan menyeluruh *Milk price information is understandable and comprehensive*	□	□	□	□	□
10	Syarat-syarat yang diberikan oleh pembeli saya adalah bersesuaian dengan kehendak saya berbanding syarat-syarat dari pembeli lain *Terms and condition of my buyer are better tailored to my needs than those of other buyers*	□	□	□	□	□
11	Saya mendapat nisbah harga dan kualiti yang berpatutan *I get a reasonable price-quality ratio*	□	□	□	□	□

		Sangat tidak setuju *Strongly disagree*	Tidak setuju *Disagree*	Tidak pasti *Partly agree/ disagree*	Setuju *Agree*	*Sangat setuju* Strongly agree
12	Pembeli menawarkan saya harga susu yang adil dan berpatutan *The buyer offer me fair and reasonable milk price*	□	□	□	□	□
13	Kelebihan hubungan/kontrak ini ialah kestabilannya One of the main advantages of this contract/relationship is its stability	□	□	□	□	□
14	Kontrak/ hubungan ini adalah lebih baik apabila kami tidak bergantung satu sama lain *The more interdependent we are in this contract/relationship the better*	□	□	□	□	□
15	Perubahan harga susu dimaklumkan dalam tempoh yang berpatutan. *Milk price changes are communicated timely*	□	□	□	□	□
16	Saya tahu berapa banyak hasil susu dihasilkan setiap hari dan bayaran untuk satu liter susu oleh pembeli saya *I know how many milk yield I produce everyday and how much per litre my buyer pay me*	□	□	□	□	□
17	Saya amat yakin bahawa pembeli saya sekarang adalah pilihan yang terbaik *I am convinced that my buyer is the best choice*	□	□	□	□	□

		Sangat tidak setuju *Strongly disagree*	Tidak setuju *Disagree*	Tidak pasti *Partly agree/ disagree*	Setuju *Agree*	*Sangat setuju* Strongly agree
18	Harga susu bergantung kepada kualiti hasil susu saya *The milk price depend on my milk quality*	□	□	□	□	□
19	Pembeli saya tidak mengambil kesempatan ke atas saya *My buyer does not take advantage of me*	□	□	□	□	□
20	Kelebihan hubungan/kontrak ini ialah kelonggarannya/ fleksibilitinya One of the main advantages of this contract/relationship is its flexibility	□	□	□	□	□
21	Pulangan pelaburan adalah sangat tinggi dalam hubungan/kontrak ini Return on investment is higher in this contract/relationship	□	□	□	□	□
22	Hampir kesemua kos di kongsi sama rata dengan pembeli saya di dalam kontrak/ hubungan ini *More costs are shared equally with my buyer in this contract/relationship*	□	□	□	□	□
23	Pembeli saya selalu konsisten dengan formula harga yang sama *My buyer always consistence with the same pricing formulas*	□	□	□	□	□

		Sangat tidak setuju *Strongly disagree*	Tidak setuju *Disagree*	Tidak pasti *Partly agree/ disagree*	Setuju *Agree*	*Sangat setuju* Strongly agree
24	Harga susu pembeli saya adalah jelas, menyeluruh dan mudah difahami *My buyer milk price is clear, comprehensible and understandable*	□	□	□	□	□
25	Saya merasakan bahawa harga susu yang saya terima bersesuaian dengan kualiti hasil susu saya *I have the impression that the milk price i receive fit with my milk quality*	□	□	□	□	□
26	Saya sentiasa boleh membincangkan harga hasil susu saya dan mendapatkan harga susu yang baik dan berpatutan *I can always argue my buyer price and get a good and reasonable milk price*	□	□	□	□	□
27	Harga susu pembeli saya adalah fleksibel dan boleh diubah sewajarnya *My buyer milk price is flexible and changeable accordingly*	□	□	□	□	□

Section G/ Bahagian G

1.Berbanding dengan penternak lain, dimanakah tahap kejayaan anda dalam perniagaan ini? *Compared to other producers how would you rate the success of your business?*

□ Sangat berjaya/*Very successful*

□ Berjaya/*Successful*

□ Tidak pasti/*Somewhat successful*

□ Tidak berjaya/*Unsuccessful*

□ Sangat tidak berjaya/*Very unsuccessful*

2. Pada pendapat anda, adakah sijil SALT mampu memberikan kelebihan persaingan dalam perniagaan tenusu anda. *In your opinion, does the SALT certificate improve your business competitive advantage?*

3. Pada pendapat anda, bagaimana anda melihat masa hadapan perniagaan tenusu? *In your opinion, how do you see the future of this business?*

4. Apakah alternatif perniagaan lain yang anda tahu? What viable alternative to this business that you know?

5. Pulangan pelaburan (tahun lalu)/ *Returns on investments (Last year)* ----------

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6.Kadar perkembangan perniagaan/ *Growth rate (Last Year)* ----------

Terima kasih kerana menyertai kajian ini/*We appreciate your time and patient in answering our questionnaires, we thank you for participating in this survey.*

Code references:

Firm Code:

F1-Sabah

F2-West Malaysia

Coding = F Region/District/number of respondent (00000)

If the respondent from Sabah and living in Tenom and he was the 30th respondent then the coding will be : F1/Tenom/00030

Education Code :

E1 – Primary and Secondary School

E2 – Diploma and Certificate

E3 - Tertiary Education (Degree and above)

Business Code:

B1- Livestock businesses (other than cattle)

B2- Crop businesses (Including vegetables, rice and other food crops)

B3- Commodities crop (Rubber and Palm Tree)

B4- Lansdscape business

B5- Working with other organization (Public/ Private)

B6- Entrepreneur (other type of business in different industry)

B7- Other than above

Appendix 8.2: Dairy Consumer survey

Kajian Pengguna Tenusu / Dairy Consumer Survey

Tuan/Puan

Kami menjemput tuan/puan untuk menyertai kajian pemasaran tenusu di Malaysia.

Bersama surat ini ialah soalselidik yang mengandungi pelbagai soalan berkenaan dengan persepsi kualiti dan pemasaran tenusu Malaysia. Kesudian tuan/puan melengkapkan soalseldiki ini amat saya hargai. Soalselidik ini akan mengambil masa lebih kurang 10 minit untuk dilengkapkan.

Melalui penyertaan anda, kami akan dapat memahami beberapa isu berkenaan dengan kualiti dan pemasaran hasil susu di Malaysia. Hasil kajian ini membolehkan kami mencadangkan beberapa strategi dan maklumat pasaran yang mampu mengukuhkan industri tenusu serta mencadangkan polisi tenusu yang bersesuaian kepada kerajaan.

Kami menjamin bahawa tidak ada risiko untuk terlibat dalam kajian ini malah kami memberi jaminan bahawa setiap maklumat yang diberikan adalah rahsia. Kami tidak akan menyebarkan apa-apa maklumat yang mengenalpasti tuan/puan sebagai responden selain daripada saya,

Sekiranya tuan/puan mempunyai sebarang pertanyaan ketika melengkapkan soalselidik ini sila berhubung dengan kami.

Yang ikhlas,

Prof. Randy Stringer , Dr. Wendy Umberger, Dr.Amos Gyau and Bonaventure Boniface

Nama Penemuduga *Interviewer name*			
	Tarikh/*Date* :	Masa/*Time* :	Tandatangan/ *Signature:*
Masa temuduga/ *Interview time*		Dari/ Hingga/ From: to:	
Semakan /*Office Check*		Dari/ Hingga/ From: to:	
Masuk Data/*Data entry*		Dari/ Hingga/ From: to:	

Bahagian/ *Section* A: Produk tenusu/ *Dairy Products*

1. Tandakan produk tenusu yang kerap anda beli. (Tandakan semua produk tenusu yang berkenaan)/ *Which of the following types of dairy products do you tend to buy regularly? (Check all that apply)*

1 ☐Susu/*Milk*	2 ☐Mentega/*Butter*	3 ☐Susu tepung/ *Milk Powder*	4 ☐Keju/ *Cheese*
5 ☐Aiskrim/ *Ice cream*	6 ☐yogurt/*yoghurt*		

2. Berapa kerap anda membeli setiap produk tenusu berkenaan? *How often do you purchase each of the following dairy products?*

Produk tenusu/ *Dairy Products*	**Setiap hari/*Daily***	**Setiap minggu/*Weekly***	**Dua minggu sekali/*Every two weeks***	**Setiap bulan/*monthly***	**Kurang dari sebulan/*Less than a month***	**Tidak pernah/ *never***
a. Susu/*Milk*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐
b. Mentega/*Butter*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐
c. Susu tepung /*Milk Powder*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐
d. Keju/*Cheese*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐
e. Aiskrim/*Ice Cream*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐
f. Yoghurt/*Yoghurt*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐

3. Adakah penggunaan produk tenusu anda meningkat sejak 3 tahun yang lalu? /
Do your consumption of dairy products had increased in the last 3 years?

Ya/*Yes* ☐ Tidak/*No* ☐

3a) Jika ya, sila tandakan semua kotak yang berkenaan/ If yes, please tick all that apply

1 ☐menggunakan lebih banyak susu/*consume more milk*	2 ☐menggunakan lebih banyak mentega/*consume more Butter*	3 ☐menggunakan lebih banyak susu tepung/*consume more milk Powder*	4 ☐menggunakan lebih banyak keju /*consume more Cheese*
5 ☐menggunakan lebih banyak aiskrim/*consume more Ice cream*	6 ☐menggunakan lebih banyak yogurt/*consume more yoghurt*		

4. Nilaikan faktor mempengaruhi pembelian produk tenusu. *Give your value to the influential factors in buying dairy products.*

Faktor-faktor yang mungkin mempengaruhi saya untuk membeli produk tenusu/ ***Possible factors influencing why I purchase dairy products.***	**1 =** **Sangat tidak mem-pengaruhi/** ***Strongly not influential***	**2 =** **Tidak mem-pengaruhi/** ***not influential***	**3 =** **Kadang tidak mem-pengaruhi/** ***somewhat not influential***	**4 =** **Tidak mem-pengaruhi atau mem-perngaruhi/** ***Neither influential nor not influential***	**5 =** **Kadang mem-pengaruhi/** ***Somewhat influential***	**6=** **Mem-pengaruhi/** ***influential***	**7=** **Sangat mem-pengaruhi/** ***Strongly influential***
a.Keperluan isi rumah (cth: makanan bayi dll)/ *Household necessity (eg: baby food etc)*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
b. Harga produk tenusu *Dairy products price*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
c.Jenama produk (cth: Nestle,Dutch Lady) *Milk brand (eg: Nestle, Dutch Lady)*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
d.Cara pembungkusan (cth: dalam botol/ kotak) *Type of Packaging (eg: in bottle/ boxes)*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
e. Penjagaan kesihatan melalui produk tenusu/ *Gaining health benefits from dairy products*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
f. Produk tenusu keluaran dalam Negara *Locally produce dairy products*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐

Faktor-faktor yang mungkin mempengaruhi saya untuk membeli produk tenusu/ ***Possible factors influencing why I purchase dairy products.***	**1 =** **Sangat tidak mem-pengaruhi/** ***Strongly not influential***	**2 =** **Tidak mem-pengaruhi/** ***not influential***	**3 =** **Kadang tidak mem-pengaruhi/** ***somewhat not influential***	**4 =** **Tidak mem-pengaruhi atau mem-perngaruhi/** ***Neither influential nor not influential***	**5 =** **Kadang mem-pengaruhi/** ***Somewhat influential***	**6=** **Mem-pengaruhi/** ***influential***	**7=** **Sangat mem-pengaruhi/** ***Strongly influential***
g. Produk tenusu diimport dari luar Negara *Imported dairy products*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
h. Maklumat label lengkap (cth: tarikh luput/kandungan nutrisi susu) *Complete label information (eg: Expired date, milk nutrition)*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
i. Lokasi penjualan produk tenusu (cth:supermarket, hypermarket) *Milk location (eg: supermarket, hypermarket)*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
j. Berkemampuan membeli produk tenusu/ *Affordable in buying dairy products*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
k. Kekerapan siaran iklan *Frequent advertised*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐

Faktor-faktor yang mungkin mempengaruhi saya untuk membeli produk tenusu/ ***Possible factors influencing why I purchase dairy products.***	**1 =** **Sangat tidak mem-pengaruhi/** ***Strongly not influential***	**2 =** **Tidak mem-pengaruhi/** ***not influential***	**3 =** **Kadang tidak mem-pengaruhi/** ***somewhat not influential***	**4 =** **Tidak mem-pengaruhi atau mem-perngaruhi/** ***Neither influential nor not influential***	**5 =** **Kadang mem-pengaruhi/** ***Somewhat influential***	**6=** **Mem-pengaruhi/** ***influential***	**7=** **Sangat mem-pengaruhi/** ***Strongly influential***
l. Pakej pemasaran syarikat/ *Company marketing package*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
m. Kualiti produk diiktiraf badan antarabangsa/ *Product Quality has been recognized by international agencies*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
n. Pengaruh keluarga atau rakan *Family or friends influence*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
o. Status sosial/ *Social status*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
p. Mempunyai logo halal/ *embedded with halal logo*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐

5. Nyatakan tempat yang anda paling suka membeli produk tenusu/
State where is the most preferred place for you to buy your dairy products (cth: Supermarket*/supermarket,* kedai runcit*/ retailler)* :_____

6. Faktor-faktor yang boleh mempengaruhi tempat anda membeli produk tenusu berkenaan /*Possible factors influencing where you purchase of dairy products*

Faktor-faktor yang mungkin mempengaruhi tempat saya membeli barangan tenusu/ *Possible factors influencing where I purchase dairy products.*	**1 = Sangat tidak mem-pengaruhi/ *Strongly not influential***	**2 = Tidak mem-pengaruhi/ *not influential***	**3 = Kadang tidak mem-pengaruhi/ *somewhat not influential***	**4 = Tidak mem-pengaruhi atau mem-perngaruhi/ *Neither influential nor not influential***	**5 = Kadang mem-pengaruhi/ *Somewhat influential***	**6= Mem-pengaruhi/ *influential***	**7= Sangat mem-pengaruhi/ *Strongly influential***
a. pengalaman membeli belah yang pantas dan cekap/ *Speed, efficiency of shopping experience*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
b. kedai/pasar pilihan yang kepelbagaian/ *Store/market selection, variety availability*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
c. reputasi kedai/pasar *Store/market's reputation*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
d. boleh mendapatkan barang terbaik (rasa, kuality dll)/ availability of higher quality products (taste, quality etc)	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐

Faktor-faktor yang mungkin mempengaruhi tempat saya membeli barangan tenusu/ ***Possible factors influencing where I purchase dairy products.***	**1 =** **Sangat tidak mem-pengaruhi/** ***Strongly not influential***	**2 =** **Tidak mem-pengaruhi/** ***not influential***	**3 =** **Kadang tidak mem-pengaruhi/** ***somewhat not influential***	**4 =** **Tidak mem-pengaruhi atau mem-perngaruhi/** ***Neither influential nor not influential***	**5 =** **Kadang mem-pengaruhi/** ***Somewhat influential***	**6=** **Mem-pengaruhi/** ***influential***	**7=** **Sangat mem-pengaruhi/** ***Strongly influential***
e. Menyokong pengeluar tempatan dan komuniti/ *Support local producers and community*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
f. kebersihan kedai/pasar/ *Cleanliness of store/market*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
g. harga kompetetif/ *Competitive prices*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
h. lokasi yang menyenangkan/ *Convenient location*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
i. pekerja berpengetahuan/ *Knowledgeable staff*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
j. peluang bersosial/ *Social opportunities*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐

7. Kelebihan-kelebihan menggunakan barangan tenusu/ *benefits of dairy products consumption*

Kelebihan-kelebihan menggunakan barangan tenusu/ ***benefits of dairy products consumption***	**1 =** **Sangat tidak setuju/** ***Strongly Disagree***	**2 =** **Tidak setuju/** ***Disagree***	**3 =** **Kadang tidak setuju/** ***some-what Disagree***	**4 =** **Tidak setuju atau setuju/** ***Neither agree nor disagree***	**5 =** **Kadang setuju/** ***Some-what Agree***	**6 =** **Setuju/** ***Agree***	**7 =** **Sangat setuju/** ***Strongly Agree***
a. Sumber protin yang baik/*A good source of protein*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
b. Produk tenusu memberikan nutrisi yang baik/Dairy products provide good nutrien	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
c. Merupakan sumber vitamin yang baik/*A good source of vitamins*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
d. Rendah kolestrol/*Low in cholesterol*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
e. Produk tenusu baik untuk kesihatan saya dan keluarga saya/*Fresh milk is healthier for me and my family*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
f. Sumber kalsium yang baik/*A good source of calcium*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
g. Produk tenusu adalah perlu untuk penjagaan diet saya/*dairy products are necessary in my diet*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
h. Tidak semua produk tenusu baik untuk kesihatan saya/*Not all dairy products good for my health*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐

Kelebihan-kelebihan menggunakan barangan tenusu/ ***benefits of dairy products consumption***	**1 =** **Sangat tidak setuju/** ***Strongly Disagree***	**2 =** **Tidak setuju/** ***Disagree***	**3 =** **Kadang tidak setuju/** ***some-what Disagree***	**4 =** **Tidak setuju atau setuju/** ***Neither agree nor disagree***	**5 =** **Kadang setuju/** ***Some-what Agree***	**6 =** **Setuju/** ***Agree***	**7 =** **Sangat setuju/** ***Strongly Agree***
i. Produk tenusu boleh menggemukkan/*Dairy products too fattening*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
j. Tenusu mempunyai lebih nutrisi/kalori/*Dairy more nutritious/calories*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
k.Saya menngunakan produk tenusu kerana tidak mempunyai kalsium yang mencukupi/ *I consume dairy products cause i'm not getting enough calsium*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
l. Sumber zink yang baik/*A good source of zinc*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
m. Cara terbaik untuk tidak mengambil sumber kalsium tambahan/ *Best way not to take calcium supplements*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
n. Sumber potasium yang baik/*A good source of potassium*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐

Kelebihan-kelebihan menggunakan barangan tenusu/ ***benefits of dairy products consumption***	**1 =** **Sangat tidak setuju/** ***Strongly Disagree***	**2 =** **Tidak setuju/** ***Disagree***	**3 =** **Kadang tidak setuju/** ***some-what Disagree***	**4 =** **Tidak setuju atau setuju/** ***Neither agree nor disagree***	**5 =** **Kadang setuju/** ***Some-what Agree***	**6 =** **Setuju/** ***Agree***	**7 =** **Sangat setuju/** ***Strongly Agree***
o. tidak pernah kekurangan kalsium/*Never outgrow calcium need*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
p. Sumber vitamin yang baik/*A good source of vitamin D*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐

8. Pernahkan anda mendengar tentang program susu sekolah? Ya ☐ Tidak ☐
   Have you heard about school milk program? *Yes* *No*

9. Jika ya, nyatakan pandangan anda tentang program berkenaan. Adakah ia berkesan atau sebaliknya?
   If yes, please state your opinion about this program. Is it effective or otherwise?

   _____
   _____
   _____
   _____

Bahagian /*Section* B : Persepsi Pelanggan terhadap susu/ *Consumer's Milk Perceptions*

Sila tandakan jawapan anda di kotak jawapan yang bersesuaian.

Answer the following questions by ticking a box that reflects your evaluation of each of the statements given below

10. Nilaikan faktor mempengaruhi pembelian susu./*Give your value to the influential factors in buying milk.*

Faktor-faktor yang mungkin mempengaruhi saya untuk membeli susu/ *Possible factors influencing why I purchase milk.*	**1 = Sangat tidak mem-pengaruhi/ *Strongly not influential***	**2 = Tidak mem-pengaruhi/ *not influential***	**3 = Kadang tidak mem-pengaruhi/ *somewhat not influential***	**4 = Tidak mem-pengaruhi atau mem-perngaruhi/ *Neither influential nor not influential***	**5 = Kadang mem-pengaruhi/ *Somewhat influential***	**6= Mem-pengaruhi/ *influential***	**7= Sangat mem-pengaruhi/ *Strongly influential***
a.Jenama susu (cth: Dutch Lady, Nestle,Desa) *Milk brand (eg: Dutch Lady, Nestle, Desa)*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
b.Cara pembungkusan (cth: dalam botol/ kotak) *Type of Packaging (eg: in bottle/ boxes)*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
c.Harga susu/*Milk price*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
d.Susu keluaran dalam Negara *Locally produce milk*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐

Faktor-faktor yang mungkin mempengaruhi saya untuk membeli susu/ ***Possible factors influencing why I purchase milk.***	**1 =** **Sangat tidak mem-pengaruhi/** ***Strongly not influential***	**2 =** **Tidak mem-pengaruhi/** ***not influential***	**3 =** **Kadang tidak mem-pengaruhi/** ***somewhat not influential***	**4 =** **Tidak mem-pengaruhi atau mem-perngaruhi/** ***Neither influential nor not influential***	**5 =** **Kadang mem-pengaruhi/** ***Somewhat influential***	**6=** **Mem-pengaruhi/** ***influential***	**7=** **Sangat mem-pengaruhi/** ***Strongly influential***
e.Susu diimport dari luar Negara/*Imported milk*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
f.Maklumat label lengkap (cth: tarikh luput/kandungan susu) *Complete label information (eg: Expired date, milk nutrition)*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
g.Kekerapan siaran iklan *Frequent advertised*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
h.Khidmat penghantaran(cth: hantar rumah ke rumah) *Delivery service(eg: door to door delivery)*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐

Faktor-faktor yang mungkin mempengaruhi saya untuk membeli susu/ ***Possible factors influencing why I purchase milk.***	**1 =** **Sangat tidak mem-pengaruhi/** ***Strongly not influential***	**2 =** **Tidak mem-pengaruhi/** ***not influential***	**3 =** **Kadang tidak mem-pengaruhi/** ***somewhat not influential***	**4 =** **Tidak mem-pengaruhi atau mem-perngaruhi/** ***Neither influential nor not influential***	**5 =** **Kadang mem-pengaruhi/** ***Somewhat influential***	**6=** **Mem-pengaruhi/** ***influential***	**7=** **Sangat mem-pengaruhi/** ***Strongly influential***
i.Lokasi penjualan susu (cth:supermarket, hypermarket) *Milk location (eg: supermarket, hypermarket)*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
j.Program susu sekolah *School milk program*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
k.Tahu dimana ladang hasil susu berkenaan *Farm traceability*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
l.Pengaruh keluarga atau rakan *Family or friends influence*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐

Faktor-faktor yang mungkin mempengaruhi saya untuk membeli susu/ ***Possible factors influencing why I purchase milk.***	**1 =** **Sangat tidak mem-pengaruhi/** ***Strongly not influential***	**2 =** **Tidak mem-pengaruhi/** ***not influential***	**3 =** **Kadang tidak mem-pengaruhi/** ***somewhat not influential***	**4 =** **Tidak mem-pengaruhi atau mem-perngaruhi/** ***Neither influential nor not influential***	**5 =** **Kadang mem-pengaruhi/** ***Somewhat influential***	**6=** **Mem-pengaruhi/** ***influential***	**7=** **Sangat mem-pengaruhi/** ***Strongly influential***
m.Mempunyai logo halal/ *embedded with halal logo*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
n.Kualiti susu diiktiraf badan antarabangsa/ *Milk Quality has been recognized by international agencies*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
o.Kualiti susu diiktiraf oleh Jabatan Haiwan Malaysia/ *Milk quality has been recognized by Malaysian Veterinary Department*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
p.Susu berperisa / *flavoured Milk*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐

11. Persepsi pengguna susu segar berbanding dengan produk tenusu lain/ *Consumer fresh milk perceptions relative to other dairy products.*

Susu segar berbanding dengan produk tenusu lain/ ***Fresh milk perceptions relative to other dairy products.***	**1 =** **Sangat tidak setuju/** ***Strongly Disagree***	**2 =** **Tidak setuju/** ***Disagree***	**3 =** **Kadang tidak setuju/** ***some-what Disagree***	**4 =** **Tidak setuju atau setuju/** ***Neither agree nor disagree***	**5 =** **Kadang setuju/** ***Some-what Agree***	**6 =** **Setuju/** ***Agree***	**7 =** **Sangat setuju/** ***Strongly Agree***
a. Susu segar adalah lebih kepada penjagaan persekitaran/*Fresh milk is more environmentally friendly*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
b. Susu segar adalah perlu untuk penjagaan diet saya/*Fresh milk is necessary in my diet*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
c. Susu segar adalah murah dan tidak mahal/*Fresh milk is cheaper, less expensive*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
d. Susu segar rasa segar di dalam mulut/*Fresh milk feels good in the mouth*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
e. Merupakan sumber vitamin yang baik/*A good source of vitamins*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
f. Sukar untuk dicernakan/*Hard to digest*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
g. Mudah diminum/*convenient to drink*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
h. Diubah secara genetik/*Genetically modified*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐

Susu segar berbanding dengan produk tenusu lain/ ***Fresh milk perceptions relative to other dairy products.***	**1 =** **Sangat tidak setuju/** ***Strongly Disagree***	**2 =** **Tidak setuju/** ***Disagree***	**3 =** **Kadang tidak setuju/** ***some-what Disagree***	**4 =** **Tidak setuju atau setuju/** ***Neither agree nor disagree***	**5 =** **Kadang setuju/** ***Some-what Agree***	**6 =** **Setuju/** ***Agree***	**7 =** **Sangat setuju/** ***Strongly Agree***
i. mudah dibeli dikedai/*easily purchased from the shop*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
j. Rasa seperti air/*Watery*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
k. Rendah kolestrol/*Low in cholesterol*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
l. Susu segar lebih berkualiti/*Fresh milk is of higher quality*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
m. Susu segar lebih segar/*Fresh milk is fresher*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
n. Susu segar lebih baik rasanya/*Fresh milk taste better*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
o. Susu segar baik untuk kesihatan saya dan keluarga saya/*Fresh milk is healthier for me and my family*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐

Susu segar berbanding dengan produk tenusu lain/ ***Fresh milk perceptions relative to other dairy products.***	**1 =** **Sangat tidak setuju/** ***Strongly Disagree***	**2 =** **Tidak setuju/** ***Disagree***	**3 =** **Kadang tidak setuju/** ***some-what Disagree***	**4 =** **Tidak setuju atau setuju/** ***Neither agree nor disagree***	**5 =** **Kadang setuju/** ***Some-what Agree***	**6 =** **Setuju/** ***Agree***	**7 =** **Sangat setuju/** ***Strongly Agree***
p. Dibungkus dalam saiz yang berpatutan/*Packed in the right size*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
q. Rasa berkrim/*Creamy*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
r. Sumber kalsium yang baik/*A good source of calcium*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
s. Susu segar lebih tahan lama/*Fresh milk is durable*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
t. Sumber protin yang baik/*A good source of protein*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐

12. Persepsi pengguna susu segar berbanding susu tepung/ *Consumer fresh milk perceptions relative to milk powdered.*

Susu segar berbanding susu tepung/ ***Fresh milk relative to powder milk***	**1 =** **Sangat tidak setuju/** ***Strongly Disagree***	**2 =** **Tidak setuju/** ***Disagree***	**3 =** **Kadang tidak setuju/** ***some-what*** ***Disagree***	**4 =** **Tidak setuju atau setuju/** ***Neither agree nor disagree***	**5 =** **Kadang setuju/** ***Some-what Agree***	**6 =** **Setuju/** ***Agree***	**7 =** **Sangat setuju/** ***Strongly Agree***
a. Susu segar adalah lebih kepada penjagaan persekitaran/ *fresh milk is more environmentally friendly*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
b. Susu segar adalah perlu untuk penjagaan diet saya/ *fresh milk is necessary in my diet*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
c. Susu segar adalah murah dan tidak mahal/ *fresh milk is cheaper, less expensive*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
d. Susu segar rasa segar di dalam mulut/ *fresh milk feels good in the mouth*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
e. Merupakan sumber vitamin yang baik/*A good source of vitamins*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
f. Sukar untuk dicernakan/*Hard to digest*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐

Susu segar berbanding susu tepung/ *Fresh milk relative to powder milk*	**1 = Sangat tidak setuju/ *Strongly Disagree***	**2 = Tidak setuju/ *Disagree***	**3 = Kadang tidak setuju/ *some-what Disagree***	**4 = Tidak setuju atau setuju/ *Neither agree nor disagree***	**5 = Kadang setuju/ *Some-what Agree***	**6 = Setuju/ *Agree***	**7 = Sangat setuju/ *Strongly Agree***
h. Diubah secara genetik/*Genetically modified*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
i. mudah dibeli dikedai/*easily purchased from the shop*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
j. Rasa seperti air/*Watery*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
k. Rendah kolestrol/*Low in cholesterol*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
l. Susu segar lebih berkualiti/*fresh milk is of higher quality*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
m. Susu segar lebih segar/ *milk powder is fresher*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
n. Susu segar lebih baik rasanya/ *fresh milk taste better*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐

Susu segar berbanding susu tepung/ *Fresh milk relative to powder milk*	**1 = Sangat tidak setuju/ *Strongly Disagree***	**2 = Tidak setuju/ *Disagree***	**3 = Kadang tidak setuju/ *some-what Disagree***	**4 = Tidak setuju atau setuju/ *Neither agree nor disagree***	**5 = Kadang setuju/ *Some-what Agree***	**6 = Setuju/ *Agree***	**7 = Sangat setuju/ *Strongly Agree***
o. Susu segar baik untuk kesihatan saya dan keluarga saya/ *fresh milk is healthier for me and my family*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
p. Dibungkus dalam saiz yang berpatutan/*Packed in the right size*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
q. Rasa berkrim/*Creamy*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
r. Sumber kalsium yang baik/*A good source of calcium*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
s. Susu segar lebih tahan lama/ *fresh milk is durable*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
t. Sumber protin yang baik/*A good source of protein*	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐

Bahagian/ *Section* C: Perincian responden/ *Respondent details*

Maklumat berkenaan di perlukan untuk analisis statistik sahaja. Kerahsiaan adalah terjaga.

The following information is necessary for statistical analysis only. It is entirely confidential.

13. Apakah nombor poskod anda?*What is your POSTCODE?* _____

14. Sila nyatakan umur anda/ *Please state your age*?

1 ☐ 18-24	2 ☐ 25-34	3 ☐ 35-44	4 ☐ 45-54	5 ☐ 55-64	6 ☐ 65 years or over

15. Apakah jantina anda?/ *What is your GENDER*?

1 ☐ Lelaki/*Male*	2 ☐ Wanita/*Female*

16. Apakah status perkahwinan anda?/ *What is your current MARITAL STATUS?*

1 ☐ Bujang, tidak berkahwin/ *Single, never married*	2 ☐ Pasangan berkahwin/*Married couple*	3 ☐ Bercerai atau berpisah/*Divorced or Separated*	4 ☐ Janda/Duda/ *Windowed/ Spouse Deceased*

17. Apakah pendidikan tertinggi anda?/*What is the highest level of EDUCATION you have completed?*

1 ☐ Sekolah Rendah/ *Primary School*	2 ☐ Sekolah Menengah/ *Secondary School*	3 ☐ Institusi Kemahiran, Politeknik/ *Technical institution, Polytechnic*	4 ☐ Ijazah universiti/ *University Degree*
5 ☐ Ijazah Pascasiswazah, Sarjana,PhD/ *Graduate Degree, Master,PhD*			

18. Apakah anggaran pendapatan kasar anda (Sebelum cukai) PENDAPATAN TAHUNAN ISIRUMAH/ *What is your approximate gross (pre-taxes) ANNUAL HOUSEHOLD INCOME?*

0 ☐ Tiada pendapatan/ *Zero Income*	1 ☐ RM1 - RM2,079	2 ☐ RM2,080 - RM4,159	3 ☐ RM4,160 - RM6,239
4 ☐ RM 6,240 - RM 8,319	5 ☐ RM 8,320 - RM 10,399	6 ☐ RM10,400 - RM 15,599	7 ☐ RM15,600 - RM20,799
8 ☐ RM 20,800 - RM 25,999	9 ☐ RM 26,000 - RM 31,199	10 ☐ RM 31,200 - RM 36,399	11☐ RM 36,400 - RM 41,599
12 ☐ RM 41,600 - RM 51,999	13 ☐ RM 52,000 - RM 77,999	14 ☐ RM 78,000 - RM 100,000	15 ☐ Lebih dari/ *more than* RM 100,000

19. Apakah status PEKERJAAN anda terkini?/*What is your current EMPLOYMENT status?*

1 ☐ Tidak bekerja/ *Unemployed*	2 ☐Sepenuh Masa/ *Full time*	3 ☐ Separuh masa/ *Part time*
4 ☐ Bersara/ *Retired/Pensioner*	5 ☐ Berada di rumah sebagai ibubapa/ *Stay at home parent*	6 ☐ Kurang upaya/ *Disabled*

Lain-lain, sila nyatakan/ *Other, please describe:*

_____

20. Adakah anda kini seorang pelajar (samada sepenuh masa atau separuh masa)/ *Are you currently a STUDENT (either full-time or part-time)?*

1 ☐ Ya/*Yes*	0 ☐ Tidak/*No*

21. Anda bekerja dengan siapa? To whom do you work for?

1 ☐ Bekerja dengan agensi kerajaan/ *Work with government agency*	2 ☐ Bekerja dengan syarikat swasta/ *Work with private company*	3 ☐ Berkerja sendiri/ *Owned business*

Lain-lain, sila nyatakan/ *Other, please describe:*
_____

22. Apakah JUMLAH ISIRUMAH anda terkini? / *What is your current HOUSEHOLD SIZE*

_____

23. Berapa ramai ANAK TANGGUNGAN yang tinggal bersama anda sekarang?/*How many DEPENDENT CHILDREN*[7] *are currently living in your home?*
_____

23a) Berapa UMUR setiap tanggungan anak yang tinggal bersama anda sekarang?/*What is/are the AGE(s) of each of the dependent children living at home?*

_____

24. Berapa ramai ANAK BUKAN TANGGUNGAN tinggal bersama anda sekarang?/*How many NON-DEPENDENT CHILDREN are currently living in your home?*

_____

24a) Berapa UMUR setiap anak bukan tanggungan yang tinggal bersama anda sekarang?/*What is/are the AGE(s) of each of the non-dependent children living at home?*

_____

25. Berapa ramai warga tua tinggal bersama anda sekarang?/*How many elderly are currently living in your home?*
_____

[7]Anak tanggungan berumur antara 0-14 tahun dan anak berumur 15-24 tahun merupakan pelajar sepenuh masa/ *Dependent children are children aged 0 to 14 years and children aged 15-24 years who are full-time students.*

25a) Berapa UMUR setiap warga tua yang tinggal bersama anda sekarang? *What is/are the AGE of each elderly living at home?*

_____

26. Apakah LATARBELAKANG ETNIK anda?/ *What is your ETHNIC BACKGROUND?*

1 ☐ Melayu	2 ☐ Cina	3 ☐ India	4 ☐ Kadazandusun
5 ☐ Bajau	6 ☐ Murut	7 ☐ Iban	8 ☐ Bidayuh

Lain-lain, sila nyatakan/ *Other, please describe:*

_____

27. Sila nyatakan agama anda/ *Please state your religion*: _____

TERIMA KASIH ATAS MASA DAN KESABARAN ANDA MENJAWAB KAJISELIDIK INI

THANK YOU VERY MUCH FOR YOUR TIME AND PATIENCE!

Appendix 8.3: Respondent's answering behavior

8.3.1: Trust, satisfaction and commitment

Descriptive Statistics

	N	Min	Max	Mean	Std. Deviation
My buyer promises are reliable	133	2	5	4.09	.743
My buyer often meets my expectations	133	2	5	3.99	.723
I have maximum effort to maintain our relationship	133	2	5	4.17	.544
I cannot trust my buyer	133	1	5	4.15	.933
I feel satisfied doing business with my buyer	133	1	5	4.06	.736
I want to maintain indefinitely our relationship	133	2	5	4.21	.551
I have trust in my buyer skill and expertise in the business	133	2	5	4.07	.730
My buyer treat me fairly and equitably	133	1	5	4.00	.778
I want to improve my relationship in long-term	133	2	5	4.18	.601
My buyer is knowledgeable in the dairy business	133	2	5	4.11	.771
We have good cooperation in this business	133	3	5	4.23	.531
Our relationship is something that we are very committed to	133	2	5	4.14	.605
My buyer cares for my welfare	133	1	5	3.89	.893
My buyer is quick to handle my complaints	133	1	5	3.65	.846
I feel committed to my buyer	133	2	5	4.07	.618
Valid N (listwise)	133				

8.3.2 : Relational Variables

Descriptive Statistics

	N	Min	Max	Mean	Std. Deviation
My buyer has a high technical expertise that can improve my milk yield	133	1	5	3.98	.793
My buyer can adjust the contract condition to fit my present requirement	133	1	5	2.89	.963
My buyer keep me informed regularly with one another	133	2	5	3.89	.677
My buyer have all the power over my dairy production	133	1	5	2.51	1.070
When I have problem, my buyer will make sure the problem does not jeopardize our contract relationship	133	1	5	3.68	.732
I have to always rely on my buyer	133	1	5	3.26	1.283
We (producer and buyer) share the same work culture	133	1	5	3.95	.576
I have no intention to get second opinion about my dairy production provided by my buyer/processor	133	1	5	3.59	.938
I have no problem communicate with my buyer	133	2	5	4.12	.628
My buyer and I always discuss and review our business objective	133	2	5	3.83	.761
My buyer respect my belief and traditions	133	1	5	4.07	.654
I have no other alternative of buyer	133	1	5	3.23	1.451
We (producer and buyer) have mutual interest in doing this business	133	2	5	3.92	.604
Both of us frequently discuss each other's expectations	133	1	5	3.71	.803
We share information regularly with one another	133	1	5	3.88	.817
My buyer control all the production information	133	1	5	3.14	1.079
I can always find other buyer to buy my milk yield	133	1	5	2.86	1.393
My buyer and I share similar goal	133	2	5	3.90	.505
My buyer understand my ways of doing my business	133	2	5	3.95	.458
My buyer and I work closely together to achieve our mutual objective	133	2	5	3.94	.504
My buyer know what type of cow breed suit my dairy business	133	1	5	3.88	.905
My buyer will always invite me to do our action plan together	133	1	5	3.41	.993
Valid N (listwise)	133				

3.3: Loyalty, financial and non-financial performance variables

Descriptive Statistics

	N	Min	Max	Mean	Std. Deviation
I am loyal to my buyer	133	20	100	88.61	15.852
I will ask other dairy producer to seek assistance from my buyer	133	0	100	76.32	23.011
My current buyer has given me the best technical support and assistance	133	0	100	76.73	26.750
The buyer have enabled me to produce at lower cost	133	0	100	63.47	23.965
I received my payment on time	133	0	100	73.72	26.462
I have been able to achieve 100% of my goals by selling to my current buyer	133	0	100	82.97	22.327
I gain steady income and financial security from this contract/relationship	133	0	100	84.01	19.659
I know the main reason why my payments is late	133	0	100	84.20	22.761
I will continue to do more business with my current buyer in the next few years	133	20	100	87.08	17.351
I receive the veterinary services and consultation regularly	133	0	100	83.61	19.736
My relationship with the buyer has been a financial success	133	0	100	86.26	17.772
My current buyer is much more convenience than other buyers	133	0	100	81.23	21.661
My buyer does not care about farm quality management	133	0	100	22.74	29.041
My buyer able to solve problem adequately	133	0	100	82.65	22.761
My relationship with my buyer are stronger when my farm is accredited and certify by the Department of veterinary	133	0	100	78.59	23.498
Record keeping and good dairy management is important to influence new buyer and to retain current buyer	133	10	100	87.14	16.356
The farm certification does not influence buyer decision to buy my milk yield	133	0	100	34.46	34.257
Valid N (listwise)	133				

8.3.4: Price Satisfaction Variables

Descriptive Statistics

	N	Min	Max	Mean	Std. Deviation
My buyer keeps all promise regarding milk price	133	1	5	3.98	.627
Milk price information is complete, correct and frank	133	2	5	4.09	.570
I do not believe other buyer will have the same or even better milk price offer	133	1	5	3.39	.952
I agree with the grading system	133	1	5	3.69	1.046
The milk price equivalent with the production cost per litre	133	1	5	2.31	1.207
We are satisfy with this contract/ relationship	133	2	5	4.17	.809
If I have other alternative buyer, I will remain with this buyer	133	1	5	3.75	.891
Milk price changes are communicated properly	133	2	5	4.05	.512
Milk price information is understandable and comprehensive	133	2	5	4.02	.507
Terms and condition of my buyer are better tailored to my needs than those of other buyers	133	1	5	3.50	.765
I get a reasonable price-quality ratio	133	1	5	3.73	.827
The buyer offer me fair and reasonable milk price	133	1	5	3.71	.952
One of the main advantages of this contract/relationship is its stability	133	2	5	4.30	.798
The more interdependent we are in this contract/relationship the better	133	1	5	3.50	1.112
Milk price changes are communicated timely	133	1	5	4.00	.550
I know how many milk yield I produce every day and how much per litre my buyer pay me	133	3	5	4.15	.435
I am convinced that my buyer is the best choice	133	1	5	3.88	.871
The milk price depend on my milk quality	133	2	5	4.08	.523
My buyer does not take advantage of me	133	1	5	3.94	.786
One of the main advantages of this contract/relationship is its flexibility	133	2	5	4.26	.787
Return on investment is higher in this contract/relationship	133	2	5	3.98	.826
More costs are shared equally with my buyer in this contract/relationship	133	1	4	2.68	.956
My buyer always consistence with the same pricing formulas	133	1	5	3.94	.504
My buyer milk price is clear, comprehensible and understandable	133	2	5	3.99	.452
I have the impression that the milk price i receive fit with my milk quality	133	1	5	3.56	.948
I can always argue my buyer price and get a good and reasonable milk price	133	1	5	2.59	1.213
My buyer milk price is flexible and changeable accordingly	133	1	5	2.53	1.098
Compared to other producers how would you rate the success of your business?	133	2	5	3.98	.444
Valid N (listwise)	133				