

The Ram Selection Process: A Network Perspective

A Review of Pertinent Literature

Chris Thomas

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University of Otago, Dunedin,

New Zealand

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Abstract

The objective of this review was to identify the selection factors and information sources utilised by farmers and processors when selecting a breed or breeder of rams, by analysing pertinent literature on these topics. It was suggested that breeders, farmers and processors interact within a complex industrial network that is not well understood. The selection of a breed or breeder by farmers and processors was considered an industrial purchasing decision, as each of organisation exhibits characteristics more similar to commercial entities than consumers.

It was therefore appropriate to critique the existing literature on industrial purchasing. The critical role of selection factors in the traditional models of industrial purchasing was noted, and it was suggested that selecting a breed or breeder was similar to choosing an industrial product or vendor. The selection factors important in the selection of an industrial product or vendor seemed to vary due to contextual differences. This suggests some uncertainty with respect to the selection factors that will be used by farmers and processors selecting a breed or breeder of rams. These models were also not designed to explain the impacts of relationships and networks on industrial purchasing. Although contemporary literature seems to explain the implications of an industrial network, the impacts of an *agricultural network* are uncertain. Finally, the importance of personal information sources in industrial purchasing was noted. Although some research sought to identify the information sources important in an agricultural context, these studies were rare, and did not take a network perspective.

The key finding of this review is that replication of the industrial purchasing literature has been insufficient to allow an understanding the selection factors and information sources utilised by farmers and processors in this agricultural network. Thus, primary research is needed to identify the selection factors and information sources utilised by farmers and processors when faced with this industrial purchase decision.

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Chapter 1 – Introduction

1.0 Background to the Research Problem

New Zealand's economy is dominated by agricultural strengths, particularly in the area of sheep farming (with exports worth almost \$3 billion, or about 12% of *all* New Zealand's 2000 exports – Ministry of Agriculture and Forestry (MAF), 2001). However, the competitive position of this industry has been eroded to some extent, resulting in a decline in profitability of many sheep farms (Alexander, 1999; McKinsey & Co., 2000). To maintain the health of the New Zealand economy, it is essential to implement strategies that will reverse this trend, improving the performance of these farms. Although there are many drivers of on-farm performance, rams are responsible for up to 80% of the genetic improvements in a flock (Wools of New Zealand, 1996), which has implications for the overall financial position of these organisations. This suggests that ram breeders will need to occupy a central role in any strategy for improving the performance of this industry. To occupy this position, it is of utmost importance for breeders to understand the purchasing behaviour of the other organisations in their network.

To effectively comprehend the purchasing behaviour in this network, breeders need to understand the following issues:

1. The selection factors that farmers/processors use to choose a breed of ram
2. The selection factors that farmers/processors use to choose a breeder of rams
3. The information sources that are used in the purchase of a ram
4. The implications of a triadic net for the purchasing of rams

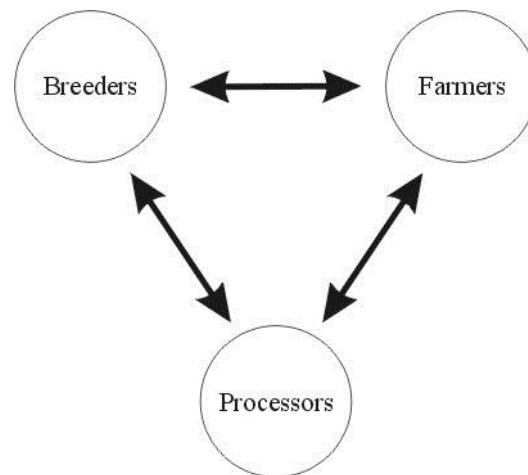
The purchase of a breed of sheep ram is considered an industrial purchase decision, due to the nature of the organisations involved. Breeders, commercial farmers and processors are autonomous units, all relatively free to interact with each other. Each of these businesses is concerned with the creation of profit. The purchasing behaviours displayed are likely to be more consistent with other organisations, than those of consumers. As a result, it will be appropriate for this review to critique the literature on industrial purchasing.

A critical part of the industrial purchasing process for breeders to understand is the role that selection factors play in the decision to purchase a breed of ram from a specific breeder. Selection factors are the underlying rationale that drives organisations to select a specific product from a specific vendor. Thus, any attempt to understand the purchasing behaviour of farmers and processors would be futile without understanding the underlying rationale of this decision. It is therefore appropriate for this review to critique the existing literature on industrial selection factors.

Breeders, farmers and processors make up part of a complex industrial network. These complexities have led Axelsson and Easton (1992) to suggest that research should focus on a net of particularly relevant relationships. In this industry breeders transact directly with farmers, who in turn transact directly with to end-users such as meat, wool and leather processors. Breeders occupy a dual role, as they also sell stock directly to the processors mentioned above. Communication also connects each organisation *directly* with the other two, although the strength of these links is not well understood. As such, for breeders to understand the industrial purchasing behaviour of farmers and processors, the implications of this net must be taken into account. This review will therefore analyse the literature on networks and relationships illustrating the impact of these paradigms on industrial purchasing.

The proposed triadic net of breeders, farmers and processors is illustrated in Figure 1 below:

Figure 1: The Proposed Agricultural Net



Finally, for breeders to understand the industrial purchasing of farmers and processors in this network, it will be necessary to understand how information sources are utilised in this purchase decision. By understanding the information sources that influence this industrial purchase, breeders will be able to identify the most effective way of communicating the factors important for selection to other members of their network. It is therefore appropriate to review the information sources important in industrial purchasing, in the context of an industrial network.

1.1 Development of a Theoretical Framework

This review will illustrate that there has been a substantial body of literature focusing on various aspects of industrial purchasing (Johnston and Lewin, 1996). However, research concentrating on agricultural marketing seems to be relatively rare (Ritson, 1997). Thus, to understand the industrial purchasing behaviour of farmers and processors, it is necessary to review what has been learnt about industrial purchasing in other contexts. This will

also demonstrate that the current research problem does not exist in isolation, and is related to a distinct body of literature.

The remainder of this review has been split into three chapters, followed by a conclusion. Firstly, chapter two seeks to review and critique the traditional models of organisational buying behaviour, interest in which has largely stemmed from three seminal works by Robinson, Faris and Wind (1967), Sheth (1973) and Webster and Wind (1972). The chapter will then examine the integration and criticism of these models (Johnston and Lewin, 1996; Thompson, Mitchell and Knox, 1998; Smith and Bard, 1989). This review will suggest that as selection factors are important to each model, a significant body of research has sought to specify the relative importance of these factors (Weber, Current and Benton, 1991; Dempsey, 1978; Verma and Pullman, 1998). Researchers have not sought to replicate these studies in a context directly applicable to the current research problem. As a result, there is a need for further primary research in this area in order for breeders to understand the selection factors favoured by other network members.

However, these models were not compiled with the objective of explaining the role of relationships and networks in industrial purchasing. It has been implied that the more transactional nature of these models has resulted in an inability to adequately explain many of the organisational behaviours that exist when relationships and networks are important (Thompson *et al*, 1998; Wilson, 1996). Chapter three will therefore seek to illustrate the implications that relationships and networks have for industrial purchasing. This review will analyse a large volume of research that seeks to explain various aspects of relationships and networks (Hakansson and Snehota, 1995; Achrol, 1997; Axelsson and Easton, 1992; Hakansson, 1982). However, it will again be demonstrated that researchers have not sought to replicate these studies in the context of an *agricultural* industrial purchasing decision. Research is therefore required so breeders can understand the implications their network has on the purchasing behaviour of farmers and processors.

Breeders also need to understand the information sources most appropriate for communicating with farmers and processors. As chapter four will demonstrate, a substantial body of literature exists that seeks to illustrate the relative importance of different promotional tools in industrial purchasing, as well as suggesting conditions that modify the importance of these tools (Moriarty and Spekman, 1984; Jackson, Keith and Burdick, 1987; Bunn and Liu, 1996). It will be illustrated that several studies suggest that the information source usage in agricultural markets differ from that purported by the academic literature (McLeay, Martin and Zwart, 1996; Martin and McLeay, 1998).

Chapter four will also analyse the influence of industrial networks on the information sources favoured during an organisational purchase. This has stemmed from research seeking to understand the patterns of information source use in intra- and inter-firm networks (Bunn and Clopton, 1993; Dawes, Lee and Dowling, 1998; Money, 2000; Ronchetto, Hutt and Reingen, 1989). However, replication of these studies has not occurred in an agricultural context. As such, primary research is needed to illustrate the influence of agricultural industrial networks. This will allow breeders to understand the implications that their network has on the information sources particularly appropriate for communicating with farmers and processors.

In conclusion, this review seeks to establish the current state of the industrial purchasing literature for several reasons. Firstly, for breeders to begin to understand the industrial purchasing of farmers and processors, it is necessary to understand how this phenomena works in other industrial settings. Secondly, and more importantly, without summarising the research that exists, it is impossible to realise the gaps in the literature. Without recognising these gaps, it is difficult to propose primary research that will further the understanding of industrial purchasing in general.

Chapter 2 – Models of Industrial Purchasing

2.0 Introduction

This chapter will discuss traditional models of industrial buying behaviour and analyse the role that selection factors play in these models, as suggested by the academic literature. This will demonstrate that much of the literature on industrial purchasing has not taken an agricultural perspective. Critiquing the extant literature will provide generic guidelines that can be utilised in primary research so breeders can comprehend why their rams are selected.

2.1 Models of Industrial Buying

2.1.0 The Buygrid Framework

Perhaps the earliest model that attempted to analyse industrial buying decisions was that purported by Robinson *et al.* (1967). The buygrid framework purported by Robinson *et al.* (1967) is illustrated in the diagram below:

Figure 2 : The Buygrid Framework

Buyphases	Buyclasses		
	New Task	Modified Rebuy	Straight Rebuy
1. Anticipation or recognition of a problem (need) and a general solution			
2. Determination of characteristics and quantity of needed item			
3. Description of characteristics and quantity of needed item			
4. Search for and qualification of potential sources			
5. Acquisition and analysis of proposals			
6. Evaluation of proposals and selection of supplier(s)			
7. Selection of an order routine			
8. Performance feedback and evaluation			

As this diagram illustrates, Robinson *et al.*'s (1967) buygrid framework is actually two discrete 'sub-models'. Firstly, the buy-phases illustrated on the vertical axis describe the stages that companies are purported in industrial purchasing. As such, industrial purchasing has been described as a process, rather than a discrete event. This implies that farmers and processors will undertake a series of distinct decisions whilst undertaking purchasing behaviour.

Secondly, the horizontal axis outlines several buy-classes, which represent different types of industrial purchase decisions (Robinson *et al.*, 1967). It is relatively difficult to propose which of the buy-classes would be most suitable for the purchasing of rams. As the purchasing of rams by farmers and processors is relatively regular, and the same suppliers are often consistently used, Robinson *et al.* (1967) would probably consider this purchase a straight rebuy situation. This would suggest that a low level of information be required, with minimal consideration of alternative suppliers. However, it is proposed that this purchase is important, complex, and has uncertain results, resulting in a relatively high amount of purchase related risk, especially from the perspective of the farmer. This seems much more consistent with a modified rebuy situation, which Robinson *et al.* (1967) suggest will require a greater level of information, with several alternative suppliers considered, and a more complex decision process. Anderson, Chu and Weitz (1987) suggest that this inability to deal with decision importance represents one of the critical weaknesses of the buy-grid framework.

This framework represents one of the more comprehensive depictions of the industrial buying process, allowing subsequent studies to identify the marketing media and messages that should be utilised at each stage (Moriarty, 1983; Moriarty and Spekman, 1984; Webster, 1991). However, the buygrid framework retains a level of simplicity by ignoring the behavioural or environmental variables that influence an industrial buying decision. This is

both a strength and a weakness, allowing managerial decision-makers to understand the framework easily (Moriarty, 1983), although there may be more to industrial purchasing than this model is able to explain. Further models were proposed to examine variables omitted by this initial model (e.g. Webster and Wind, 1972; Sheth, 1973).

2.1.1 The Webster and Wind model of Organisational Buying Behaviour

In a realisation that there was more to industrial purchasing than purported in the buygrid framework, Webster and Wind (1972) proposed a further model of organisational buying behaviour.

Webster and Wind's (1972) model expands on the influence of several factors that are external to the industrial buying process. In particular, this model focuses on influences from the environment, the organisation and the buying centre. Further, it is suggested that influences on the buying process can be activated either due to task or non-task motives. Task motives are those factors related directly to the buying problem (e.g. obtaining the minimum price), whereas non-task variables are broader than the buying problem (e.g. furthering the career of the purchaser). This implies that the strength and manner of the influence will depend on how (and why) the motive has been exerted.

This model implies that the purchasing behaviour of farmers and processors is influenced by variables from within the buying centre, organisation and environment. However, most farms are owner-operated small businesses, suggesting that there may be little scope for influence from within the buying centre or the organisation. This model may be more appropriate when aimed at the purchasing behaviour of processors, as these firms are often large with multiple sources of potential influence from within the buying centre, the organisation and the environment. Additionally, this model suggests that both task and non-task variables motivate individual purchasers. This suggests

that factors external to the purchase decision will influence the purchasing behaviour of both farmers and processors.

2.1.2 The Sheth Model of Industrial Buying Behaviour

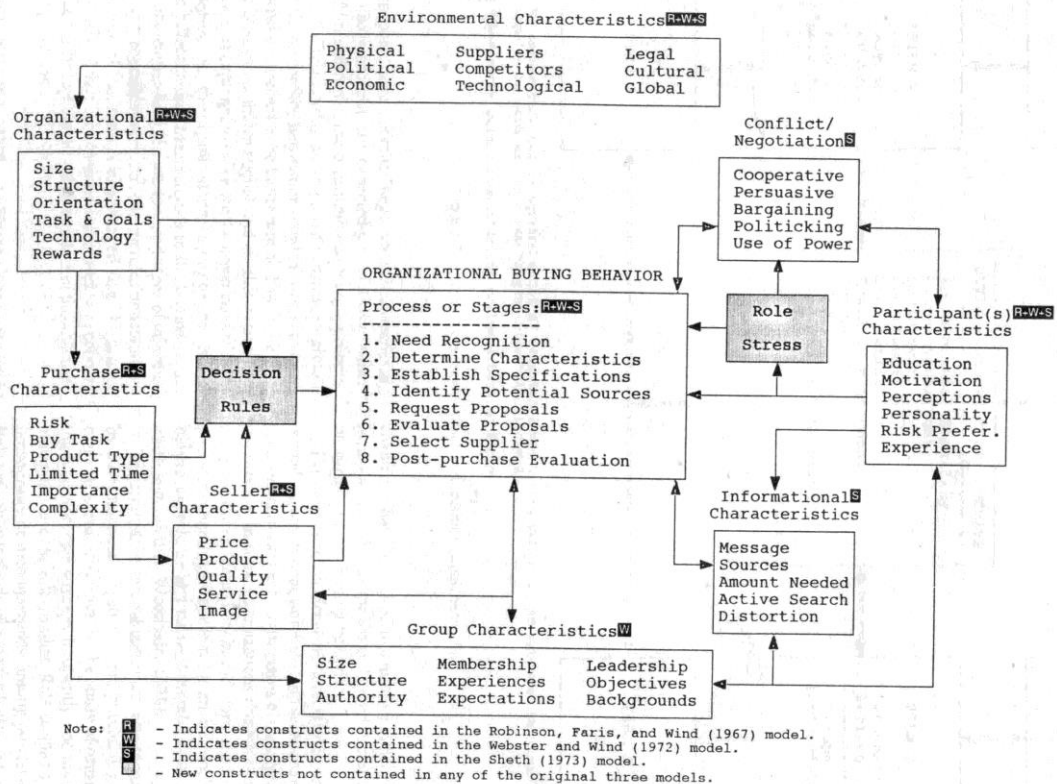
Although Robinson *et al.* (1967) and Webster and Wind (1972) depicted the industrial buying process and the influences to the organisational buying centre, a gap still existed in the industrial purchasing literature. Sheth (1973) attempted to illustrate how an individual approached decision making in the context of an industrial purchasing decision.

Sheth (1973) specifies information sources of importance in industrial purchasing, as well as suggesting the importance of past activities in the decisions of an industrial purchaser. Again, although these individual influencers are appropriate for both groups of purchasers, they are particularly suitable for farmers as an individual owner-manager usually makes organisational decisions, rather than by group consensus.

2.1.3 Model Integration and Contemporary Commentary

The three initial models have been integrated, as illustrated in Figure 3 below:

Figure 3: Johnston & Lewin's Integrative Model of Industrial Buyer Behaviour



Johnston and Lewin's (1996) review of 44 empirical and 121 conceptual articles implies that support for the traditional models has been relatively enduring. This review suggests that the four most tested constructs in the field of industrial purchasing relate to organisational/group, participant or purchase/process characteristics.

Based on Johnston and Lewin (1996), it would seem that the concepts communicated in these three models have received unilateral support. Whilst a level of acceptance has been shown for these models, approval has perhaps been at a lower level than implied by Johnston and Lewin (1996).

Thompson *et al.* (1998) perhaps expressed the strongest criticism, by suggesting that Johnston and Lewin (1996) focused upon models no longer able to explain industrial purchasing, due to their age and country of origin (USA). This questions the ability of these models to explain the contemporary purchasing behaviour of farmers and processors in New Zealand, as the purchasing behaviour exhibited by these organisations may differ from that demonstrated by firms in the United States 30 years ago.

Certainly, this view is consistent with that expressed by Smith and Bard (1989), who suggest that these general models are unable to be applied in many instances both due to their complexity and their lack of specificity. Whilst this is a valid concern, it is a weakness of all general models, not specifically those described. Webster and Wind (1972) initially noted “...*(a general model) does not describe a specific buying situation in the richness of detail required to make a model operational, and it cannot be quantified.*” (Webster and Wind, p 12, 1972). Perhaps these general models were intended to represent a starting point for further research, rather than a solution to be applied directly to individual scenarios. Thus, Smith and Bard (1989) may have been slightly premature in faulting these models.

Johnston and Lewin (1996) also sought to extend the original models, based around their review of conceptual and empirical research. In particular, it was suggested that role stress, decision rules, buyer-seller relationships and communication networks be included in a comprehensive model of industrial purchasing. Additionally, it was suggested that in situations of high purchase related risk (purchase importance, complexity, uncertainty and time pressure), such as that faced by farmers and processors, relationships would become stronger, decision rules formalised, information search more active, buying centres and networks more complicated.

Thompson *et al.* (1998) challenge some of the Johnston and Lewin's (1996) hypotheses by illustrating that in a high risk decision, soft aspects such as

existing relationships and trust may have more of an impact than previously described. Thompson *et al.* (1998) suggest that buying centre members attempted to gain consensus rather than concessions, reducing the likelihood of buying centre conflict, and the formality of decision rules. Finally, it is also suggested that inter-functional purchasing teams that existed in an ongoing (rather than ad hoc) manner reduced the potential for role stress.

However, Johnston and Lewin's (1996) biggest weakness seems to be their focus on risk management as a basis of industrial purchasing. Thompson *et al.* (1998) suggest that industrial purchasing has less to do with risk reduction, and more to do with buyers and sellers working together to produce optimum solutions for both parties. This would imply that breeders should work flexibly with farmers and processors, illustrating how their breed produces the most appropriate solution for each group. The difficulty with this proposition is that the complexity of this decision often makes it difficult to establish what is 'the best solution'.

It seems that the transactional focus of the 'traditional' industrial purchasing models has led to an insufficient treatment of relationships and networks. This has led to the suggestion that if these models are outdated they should either be updated, or disregarded and replaced by models that more accurately depict current practice in industrial purchasing (Thompson *et al.*, 1998; Wilson, 1996). However, Tanner (1999) suggests these models are less transactional in nature than has been suggested, and as such, have a place when understanding business relationships in industrial purchasing. When attempting to understand the role of relationships in industrial purchasing, Tanner (1999) implies that new theories should build from traditional foundations.

Wilson's (1996) model of industrial purchasing seems to follow these prescriptions as "...many of the activities in the eight-step process of RFW (Robinson, Faris and Wind) are represented..." (Wilson, 1996, p 14). It is

purported that a systems-oriented model explains networks and relationships more comprehensively than existing perspectives. Wilson (1996) suggests that a drastic redefinition of the competitive environment in which companies interact has driven the need to update the 'traditional' models. This redefinition has included an increase in competition, technological innovation and "total quality" practices. These factors have also become important in the sheep farming industry.

Perhaps then, by modifying Robinson *et al.*'s (1967) model, Wilson (1996) displays a level of consistency with the perspective of Tanner (1999). Tanner (1999) laments that much of the conceptual and empirical knowledge gained in studies of industrial purchasing are at risk of being lost, as researchers focus intently on business relationships. Consequently, although it is important to recognise the role of relationships and networks, it is also important to recognise the validity of past models of industrial purchasing.

2.2 Selection Factors in Industrial Purchasing

2.2.0 The Generic Role of Selection Factors

Bearing in mind the suggestions of Tanner (1999), it is important to recognise the role that selection factors have had in the traditional models, before the impacts of relationships and networks can be determined. The most direct role was shown by Robinson *et al.* (1967), as illustrated in Table 1 below:

Table 1: The Role of Selection Factors in the Industrial Purchasing Process

Phase name	Organisational Decisions	Farmer/Processor Decisions
Need Recognition		
Determine Characteristics Establish Specifications	Product Attribute Selection Factors	⇒ Breed Selection Factors
Identify Potential Sources		
Request Proposals Evaluate Proposals	Vendor Selection Factors	⇒ Breeder Selection Factors
Select Supplier		
Post-purchase Evaluation		

Adapted from Johnston and Lewin (1996)

As Table 1 demonstrates this review will focus on two distinct industrial purchasing decisions. The first is involved with defining product attributes that are required for an acceptable decision, with the second being more involved with choosing the correct supplier once the attributes have been defined. It is proposed that these two decisions are similar to the decision to choose a specific breed or breeder of rams. As this decision is proposed to be a modified rebuy situation, it is appropriate to treat breed and breeder selection as a product and vendor choice, respectively. It is propounded that the level of importance of these decisions will lead to a rather formal product attribute definition, before breeders that can deliver these attributes are sought. Additionally, it is expected that farmers and processors will exhibit similarities between these two decisions, due to the nature of influence in this industrial network.

In particular, Moriarty and Reibstein (1986) and Moriarty (1983) address the product attribute decision by suggesting that industrial purchasers are most interested in customer service, reliability and manufacturer stability with aspects such as delivery and price rated relatively lowly. Cunningham (1989) supported these studies by suggesting that product design and performance were the most important attributes, followed by adaptability. Delivery and price occupied a relatively minor role (Cunningham, 1989). This contrasts

with Rao and Wang (1995) who suggest that reliability, competitive prices, prompt delivery and close relationships are of most importance to industrial purchasers. This latter study is more consistent with Lynn (1986), who suggests professional services are purchased due to prestige of the firm, past performance and the firm's fee.

However, it should be noted that these studies recognise purchaser heterogeneity. de Kluyver, Cornelis and Whitlark (1986) illustrate different industrial purchasers use varying selection factors due to the context of the decision. For example, Moriarty (1983) examined the decision to purchase mainframe computer systems, whereas Lynn (1986) focussed on the industrial purchasing of professional services. In the latter case, delivery policies are unlikely to be as important, due to the service-oriented nature of the product. It may be that the attributes described above vary in importance based upon the type of product under consideration (Kauffman, 1994). These contextual differences make it difficult to suggest the selection factors that are of particular relevance for the selection of a breed of ram.

Vendor selection has also been addressed, with Verma and Pullman (1998), Bunn and Liu (1996), Weber *et al.* (1991), Dempsey (1978), Luffman (1974) and Patton (1996) suggesting that price, product quality and delivery policies are the most important factors. This is consistent with Vyas and Woodside (1984) who suggest that source loyalty, price and correct product specifications drive vendor selection decisions. Perhaps more importantly, it was suggested that source loyalty and product specifications are used to create an 'evoked set' of possible solutions, from which the lowest price supplier will be favoured.

However, the approach of Weber *et al.*'s (1991) review creates some concern. This study counted the number of studies that mentioned a particular construct (e.g. 80% of 74 studies mentioned price), without analysing the role that each construct played in the vendor selection decision. As such, it is

debatable whether this review demonstrates conclusively that price, delivery and quality drove the vendor selection decisions in the 74 articles reviewed. Weber *et al.* (1991) seems to imply that frequency of a particular construct equates to importance, when this variable could have been consistently unimportant. The uncertain role of price in vendor selection is illustrated by Dawes, Dowling and Patterson (1992) who imply that although price is a relatively unimportant vendor selection factor, it is a popular reason for non-selection of a particular vendor. Alternatively, as suggested by Verma and Pullman (1998), it may be that industrial purchasers report that some factors are of utmost importance, when in reality, different selection factors are used to choose a particular vendor.

The vendor selection studies mentioned above also contrast with Dickson (1966), who suggests that quality and delivery are the two most important constructs in the vendor selection decision, with price considered to be the sixth most important. Similarly, Menon, McGinnis and Ackerman (1998) suggest that perceived supplier performance and capability drove the vendor selection, with Dawes *et al.* (1992) purporting the importance of reputation and past experience with the vendor. Perhaps then, this suggests that vendor selection factors alter in importance based on differences in the types of firms involved and the particular purchase decision to be made (Dempsey, 1978). Consequentially, it is also difficult to suggest the vendor selection factors that will be of particular relevance for the selection of a breeder.

This section has suggested that customer service, reliability, manufacturer stability and product performance are of utmost importance in the selection of an industrial product. Further, price, delivery policies and product quality are of greatest importance in the selection of an industrial vendor. Contextual differences were displayed amongst studies that analysed these two decisions, suggesting that the importance of these constructs may vary in an agricultural setting. For this reason, the following section will analyse the selection factors of purported importance in an agricultural context.

2.2.1 The Role of Selection Factors in Agri-marketing

The lack of contemporary research in this area is of particular surprise, considering marketing grew from agricultural economics in the first part of this century (Sheth, Gardner and Garrett, 1988). Ritson (1997) suggests that the dearth of literature on agricultural marketing has come as a result of the growth in interest in marketing management. The literature that does investigate agricultural marketing tends to focus on the marketing of agricultural products to downstream groups in the value chain, such as wholesalers and end-consumers (Bateman, 1976). Thus, this body of literature is of limited applicability when attempting to understand the purchasing behaviour of organisations in an agricultural context. However, several industry reports attempt to communicate the selection factors important for this purchase decision. Processors and industry pressure groups provide input into these reports to guide the selection of breeds and breeders by farmers.

The factors outlined in these industry publications are summarised in Table 2 below:

Table 2: Breed Selection Factors

Organisation	Inter-breed variations
McKinsey & Co. (2000)	Perendale, Romney, Coopworth, Drysdale have high micron levels. Corriedale, Polwarth, Halfbred and Quarterbred are mid-micron breeds with Merino producing low micron wool.
The New Zealand Wool Board (2001)	Compared to Romney, Perendale breeds have smaller/lighter carcasses, lower lamb production rates, and shorter/thinner wool, although the wool is bulkier and the animals more able to survive on hill country.
The Perendale Sheep Society (1999)	Perendale sheep have very bulky, high micron wool that demands higher auction prices. Easier to manage than other breeds, particularly on hill country. Less nervous than Cheviot, but better survivors than Romney.
Geenty (1997; 2000), Kerr (2000)	Finn, East Friesian, Texel and Poll Dorset effective at improving milking ability, number of lambs born, lamb survival and growth rates. Traditional stock (e.g. Romney, Perendale, Borderdale or Corriedale) also rates highly. Texel, Suffolk, Dorset down and Poll Dorset effective at lifting carcass weight, growth rates, lean meat levels and other meat characteristics such as tenderness, colour and pH levels.
Wools of New Zealand (1996)	Romney clip heaviest of all breeds, Perendale typically 20% less, but may earn a premium because of the bulky nature of the wool. Coopworth have heavier fleece weights but require more feed. Fertility, weaning weight, growth rate and leanness important for meat production. Fleece weight, correct micron levels, wool colour, bulk and length important for fibre production.

As table 2 illustrates, the decision to purchase a breed of ram is particularly complex, with a multitude of attributes for farmers to consider. Although traditional breeds (e.g. Romney, Perendale) are compared on wool characteristics, breed comparisons on meat productivity issues typically focus on the difference between imported (e.g. Texel, Poll Dorset) and traditional breeds. However, it is important for Perendale breeders to recognise any differences between their breed and all others, with respect to both meat and wool issues.

The relatively weak investigation of inter-breed differences displayed in the industry reports seems to contrast markedly with the scientific literature on this topic. Beriain, Horcada, Purroy, Lizaso, Chasco and Mendizabel (2000) have suggested inter-breed differences with respect to fat content and colour

of slaughtered Lacha and Rasa Aragonesa sheep. Ramsey, Hatfield and Wallace (1997) also suggest differences between Suffolk and Targhee ewes, with Suffolk ewes weighing more, exhibiting higher birth-weights and consuming less feed than their Targhee counterparts. Similarly, Snowder, Glimp and Field (1994) and Hawkins, Kemp, Ely, Fox, Moody and Vimini (1984) also noted differences between various breeds of sheep. However, these studies were scientific rather than commercial in nature, and have not been replicated in the New Zealand context with relevant breeds.

Moving from the farmer’s decision to select a breed of sheep, several industry publications also discuss how farmers should choose a breeder. These guidelines are summarised below:

Table 3: Breeder Selection Factors

Organisation	Selection Factors
The Perendale Sheep Society (1999)	Emphasis on breeder records (breeding values) and sire referencing before selecting a breeder. Comparable environment and management of breeder to farmer. Superior flock performance on key breeding objectives necessary.
Geenty (1997), Kerr (2000)	Consistent breeding objectives (over time and with farmer), the use of performance records, sire referencing and breeding values. Genetic trends and production values of key clients available on request.
Geenty (2000)	Superior breeder flock performance (compared to farmer), as suggested by breeder records and genetic trend graphs.
Wools of New Zealand (1996)	Breeders should be able to measure their flock performance on key traits, indicate flock improvements over time, demonstrate a continuing selection policy and offer a good choice of rams

Table 3 suggests that processors and industry pressure groups espouse the use of quantitative measuring techniques to indicate the performance of the breeder’s flock relative to the farmers. It is implied that breeders significantly influence the decision to purchase rams, through their records. However, qualitative techniques of breeder selection such as reputation and tradition seem to be relatively neglected. This is probably due to most of these reports attempting to suggest best practice, rather than illustrating how farmers *actually do* make these decisions. Alternatively, many of these reports imply

farmers undertake a formal selection process when selecting a breeder, as if it were a 'new task' (e.g. Robinson *et al*, 1967). This under-represents the importance of existing relationships, which could be a major factor in the selection of a particular breeder. These problems are compounded by the absence of research in the academic literature that seeks to describe these decisions.

2.3 Conclusion

This chapter has evaluated traditional models of industrial purchasing, illustrating the role selection factors play in these models. It was noted that industrial purchasing is considered a multi-attribute decision, with individual factors varying in importance for several reasons. Although no academic research has sought to focus on agricultural purchases and the purchasing behaviour of farmers or processors, this review has provided a number of constructs that can be tested by primary research. This will allow a better understanding of the selection factors that are used in the purchase of a breed of ram from a specific breeder.

Chapter 3 – Relationship and Network Paradigms

3.0 Introduction

As suggested in the previous chapter, traditional models of purchasing were not originally designed to explain relationship and network paradigms. As these constructs have increased in importance, they have come to represent one of the critical weaknesses of the models of industrial purchasing. To address this deficiency, this chapter will identify several different schools of thought, noting their impacts on industrial purchasing. Additionally, the implications of relationships and networks for the selection of breeds and breeders of rams by farmers and processors will be suggested. It will be noted that these relational concepts have not been well applied to the industrial purchasing of agricultural firms. As a result, the implications of relationships and networks should be addressed in any primary research that seeks to understand the purchasing behaviour of farmers and processors.

3.1 A Definition of Relationships and Networks

The shift from a short-term, transactional view to a more long term, relational view of customer/supplier interactions is reasonably well documented in the academic literature (Dwyer, Schurr and Oh, 1987; Bensaou, 1999; Matthyssens and Van den Bulte, 1994; Cannon and Perreault, 1999). However, individual firms display a variety of levels of involvement with other firms, depending on whether they take a relational or transactional view of each customer/supplier. This suggests that relationships can be difficult to define. This review chooses a rather general definition where relationships are the *“...result of an interaction process where connections have been developed between two parties that produce a mutual orientation and commitment”* (Hakansson and Snehota, 1995, p26). Although authors have used variations of this definition, it is consistent with what is generally meant by ‘a relationship’.

Although also difficult to define, networks can be thought of as a collection of relationships that influence each other (Havila and Sandstrom, 1993; Larson, 1992). It has been debated whether this definition should include all of the relationships a firm is involved in (Hakansson and Snehota, 1995; Larson, 1992) or whether to focus on a 'net' of particularly important relationships (Axelsson and Easton, 1992; Havila and Sandstrom, 1993). As breeders, farmers and processors have direct, meaningful relationships with each other, this latter definition will be used for the purposes of this review.

3.2 Schools of Relationship and Network Paradigm Thought

3.2.0 The Interaction Theory of Relationships

It has been posited that there is more to relationship formation than purely economic considerations (Dwyer *et al*, 1987; Easton and Araujo, 1994). Proponents of the social exchange school of relationship formation focused more intently on the social tapestry that represented all past, present and future inter-firm interactions. Economic considerations were secondary to interpersonal construes such as trust, honesty, commitment, and the open exchange of information (Simpson and Wren, 1997; Dwyer *et al*, 1987). This implies that the selection of breeds and breeders by farmers and processors may be driven by these more qualitative factors, in addition to rational motivations.

A similar approach was taken by the International Marketing and Purchasing Group (IMP) when examining the interaction between members of a relational dyad (Hakansson, 1982). It was observed that existing theories of industrial purchasing were not adequately able to explain the stability of long-term relationships between organisations. As such, Hakansson (1982) also suggests that relationships have rational and sociological drivers, which explains their perpetuation over time. Industrial markets were observed to involve relatively small numbers of highly interactive buyers and sellers, with

significant switching costs maintaining a level of stability in the relationship. This would imply that farmers and processors continue selecting the same breed or breeders as there are switching costs associated with changing products or vendors.

Hakansson (1982) suggests that interactions between two participants exist in the context of a relationship specific atmosphere. Further, it was suggested that the interaction process of a relationship could be represented by exchanges of products/services, information, and financial or social items. It is suggested that given successful elemental exchange, the roles and expectations of the participants will become routinised over time (Hakansson, 1982). This routinisation process is believed to develop relational norms over time (Larson, 1992; Simpson and Wren, 1997). These informal rules seem to play a large part in the governance of relationships, rather than relying on contractual enforcement (e.g. Fram, 1995; Webster, 1992). This would imply that norms developed over time govern the relationships between breeders, farmers and processors. Breeders may therefore be able to use these established norms and traditions to encourage the continued selection of their breed by farmers and processors.

Both Dwyer *et al.* (1987) and Ford (1982) developed stage-like frameworks of relationship development. The stages were fairly similar in that both moved from fairly uncommitted forms of interaction to more committed forms as time progressed. However, it is not clear in either of these frameworks at which stage a relationship could be said to have formed. It is implied that relationships initiate as a result of an introductory period of successful interaction. However, this implies that relationships come into existence before any exchange actually occurs. Perhaps it is the case that prior to exchange firms have interactions, with relationships being developed over time.

Additionally, the frameworks compiled by Dwyer *et al.* (1987) and Ford (1982) both imply that firms desire their relationships with other firms to be closer. This implies that that each breeder wishes to develop closer relationships with all farmers and processors, something which is neither possible nor desirable. This is due to the time and resources it takes to develop close, trusting relationships (Hakansson, 1982). As such, it may be inappropriate to develop close relationships with all companies in a firm's network (e.g. Bensaou, 1999; Simpson and Wren, 1997; Perrien, Filiatrault and Ricard, 1993; Cannon and Perreault, 1999). Breeders should therefore realise that some firms will desire selection factors inappropriate for them to supply. Breeders should therefore target farmers and processors interested in the selection factors congruent with those the breeder is able to supply.

It has also been suggested that the Resource Based Theory (RBT) of the firm has implications for the role of relationships in industrial purchasing (Hunt, 1997). RBT focuses on the internal resources and competencies of the firm, whereas interaction and exchange theorists analyse the connections between firms. Although not identical, consistencies can be seen between RBT and the interaction approach. The central tenet of RBT is that firms are made up of collections of resources, the manipulation of which can be used to create a sustainable competitive advantage (Hunt, 1997). These resources include intangible items, such as relationships with customers. This implies that a breeder's relationship with farmers and processors could be a source of competitive advantage for the future. Thus, a close relationship with a particular processor could be used to encourage selection of the breeder by farmers.

3.2.1 The Network Approach

Hakansson and Snehota (1995) explicitly described three levels of connectivity that may link two interacting firms. These links included connections between the firms' activities, resources and actors. Perhaps though, this was not the most significant development from earlier

publications. Hakansson and Snehota (1995) also analyse the effects that a successful relationship has on the various functions of a business. It was believed that relationships had implications for each company, the dyadic relationship between the companies, as well as the each company's interaction with other third parties.

Thus, Hakansson and Snehota (1995) extended the earlier model by suggesting closer activity, resource and actor links would have the implications for a firm other relationships. Each individual relationship was believed to exist in the context of a wider social system, which in turn impacted upon all of the firm's other relationships (Hakansson and Snehota, 1995). It was suggested that a strengthening of a focal relationship would cause a reaction from other peripheral firms, either strengthening or weakening their respective relationships. This implies that the selection of a breeder by farmers and processors will impact upon the relationship between the farmers and processors. For example, the quality of the ram supplied by the breeder will effect the quality of the farmer's lambs, which will effect the amount processors are willing to pay for them.

Hakansson and Snehota's (1995) network perspective seems to be consistent with Piercy and Cravens (1995), who observed that traditional 'marketing organisations' would need to be altered to adapt to the dynamic requirements of a network. In particular, Piercy and Cravens (1995) noticed that the internal structure of an organisation dictated the firm's ability to implement market-oriented strategies, as well as affecting the organisation's effectiveness as an information processing and disseminating organism. Both Piercy and Cravens (1995) and later Achrol (1997) suggested new organisational structures representing collaborations of flexible market-oriented companies be implemented to adapt to this new network-oriented paradigm of marketing. It is implied that a network organisation should be made up of a collection of relationships that may transcend industries.

Both Hakansson and Snehota (1995) and Achrol (1997) imply that a network consists of all the relationships a firm has with associated firms. Although theoretically valid, subsequent reviews of empirical research (Backhaus and Buschken, 1997) have noted that operationalising these network perspectives is particularly difficult, due to the resulting size and complexity of the networks. For example, a breeder's network would include their relationships with banks, vets and even the milkman, whose influence on the ram purchasing decision may be questionable. Due to the difficulties implementing network theory Axelsson and Easton (1992) suggest that network theory should focus on a discrete set of direct relationships, of utmost importance to the operation of the business. In the context of the current research problem, this 'net' of companies would include breeders, farmers and processors, as these relationships impact directly upon the ram purchase decision.

Axelsson and Easton's (1992) net perspective has received a relatively large amount of support. The most dominant theme in this literature stream has been to illustrate the influence patterns that occur between various members of the value chain (e.g. Larson, 1992). This has given rise to the idea of the triadic unit, where a *"net of three independent companies connected to each other by direct exchange relationship for the purpose of doing business"* (Tahtinen and Halinen-Kaila, 1997). Tahtinen and Halinen-Kaila's definition of a triad is supported by Easton and Lundgren (1992), who believe that a triad is three actors combined by a minimum of two exchange relationships comprising a small part of a network, otherwise known as a net. These studies imply that third party members of a relationship are able to influence the outcomes of a focal relationship. This implies that the relationship breeders have with farmers and processors will have implications for the relationships *between* these two organisations. Several studies have taken a similar approach to identify the patterns of influence in a triadic net, although none have taken an agricultural perspective (Phillips, Liu and Costello, 1998; Havila and Sandstrom, 1993; Deshpande, 1999; Naqvi and Wemhoner, 1995; Ritter, 1999).

3.3 Implications of Relationships and Networks for Agri-marketing

Given the increased emphasis on business networks and relationships, it is of importance to the current study to evaluate the extent to which these constructs have been applied to an agricultural context. As illustrated in the section on selection factors, it seems as if much of the work that has been conducted in this area is in the form of numerous industry reports (e.g. Perendale Sheep Society, 1999; The New Zealand Wool Board, 2001). Although aimed at communicating industry best practice to farmers, processors often have an influence on the publication of these reports. Consequentially, the ability of these reports to reliably give an accurate picture of the current buyer behaviour of farmers or processors is dubious.

As mentioned earlier, industry publications that assist the commercial farmer in choosing a breed or breeder of rams often implicitly assume that the farmer is faced with a 'new task' decision (Geenty, 2000; Kerr, 2000). For this reason, industry guides often purport a formal 'comparison' of a number of relatively quantitative sources of information, as illustrated in the section on selection factors. However, the purchase of a new breed of ram, from an unknown breeder represents a decision of significant risk for the commercial farmer. As a result, it is likely that the quantitative information purported to distinguish between breeds and breeders will only be effective if a level of trust currently exists between the breeder and the prospective client.

Farmers also face significant switching costs when changing their flock from one breed to another. The new breed needs to satisfy a multitude of objectives that varies between individual farmers. Additionally, the aims for genetic improvement set by breeders take generations for farmers to observe, which suggests that farmers will be unlikely to switch due to the time invested in achieving current breeding objectives. It is believed that these switching costs, in conjunction with the level of risk mentioned above, will make farmers

relatively loyal to existing breeders, unless performance is below par. In conclusion, it is believed that existing industry reports do not adequately address that the importance of relationships and networks when farmers choose a breed or breeder of rams. This is possibly due to the political nature of this decision for processors, which makes industry reports focus on objective measures of difference between breeds and breeders.

3.4 Conclusion

The chapter has noted that business relationships and networks have increased in importance since the initial models of industrial buying behaviour. Although there are various schools of thought, none of the literature in this area attempts to apply these concepts to an agricultural context. As such, any primary research that seeks to understand the purchasing processes of an agricultural 'net' will need to apply relational concepts. To investigate the purchasing process of farmers and processors, these paradigms will be applied to gain a fuller understanding of this purchase decision.

Chapter 4 – Industrial Communications Theory

4.0 Introduction

Relationships and networks are purported to impact on the information sources important in industrial purchasing. Although a significant amount of research exists on the relative importance of various information sources, and the factors that modify this rating, less takes a network perspective. Similarly, although a few studies seek to summarise the information sources important in agricultural purchasing, the influence of agricultural ‘nets’ has not been investigated. This review will illustrate that for breeders to properly understand the purchasing process of farmers and processors, the impact of network theory on the information sources preferred will need to be understood.

4.1 Industrial Information Sources

This section will firstly illustrate the relative importance of various promotional tools, before moving into a more thorough discussion of the factors that alter the importance of these tools.

4.1.0 The Relative Importance of Various Communication Tools

Moriarty and Spekman (1984) provide a taxonomy of various promotional tools that will be used to categorise the research that has been done in this area. An adapted version of this taxonomy is provided below:

Table 4: Taxonomy of Information Sources Used by Industrial Buyers

Personal	Impersonal
<i>Commercial</i>	
Salespeople	Advertising in trade publications
Tradeshows	Other industrial advertising
Other channel members	Sales literature
Direct marketing	
<i>Non-commercial</i>	
Internal company department	News publications
Outside consultants	Trade associations
Business colleagues	Rating services
Friends and family	Technical literature
Other sources of word-of-mouth	

Adapted from Moriarty and Spekman (1984)

The taxonomy illustrated in Table 4 will now be used to classify the research that has been conducted in this area. This classification is depicted below in Table 5, where Y means that the article addressed the use of a particular promotional tool, and N means that the article did not focus substantively on that information source.

Table 5: Information Sources used by Industrial Buyers in the Literature

Author	Personal Commercial	Personal Non-commercial	Impersonal Commercial	Impersonal Non-commercial
Luffman (1974)	Y	Y	Y	N
Dempsey (1978)	Y	Y	Y	Y
Parasuraman (1981)	Y	Y	Y	N
Erickson and Gross (1980)	Y	Y	N	N
Moriarty (1983)	Y	Y	Y	Y
Moriarty and Spekman (1984)	Y	Y	Y	Y
Krapfel (1985)	Y	N	N	N
Cooke (1986)	Y	N	N	N
Jackson <i>et al.</i> (1987)	Y	N	Y	Y
Ronchetto <i>et al.</i> (1989)	N	Y	N	N
Holland and Lockett (1992)	Y	N	N	N
Bunn and Clopton (1993)	Y	Y	Y	N
Henthorne <i>et al.</i> (1993)	Y	Y	N	N
McLeay, <i>et al.</i> (1996)	Y	Y	N	N
Bunn and Liu (1996)	Y	Y	Y	Y
Gilliland and Johnston (1997)	N	N	Y	N
Michael (1997)	Y	Y	Y	N
Brossard (1998)	Y	Y	Y	Y
Martin and McLeay (1998)	Y	Y	N	N
Dawes <i>et al.</i> (1998)	N	Y	N	N
Money <i>et al.</i> (1998)	Y	Y	N	N
Workman <i>et al.</i> (1998)	N	Y	N	N
Katrichis (1998)	Y	Y	N	N
Thompson <i>et al.</i> (1998)	N	Y	Y	N
Homburg <i>et al.</i> (1999)	N	Y	N	N
Money <i>et al.</i> (2000)	Y	Y	N	N
TOTAL (% of articles) (n=26)	77%	81%	46%	23%

Not all of this literature seeks to compare the relative importance of various communication tools, with much focusing on how a specific source has been

used. As a result, Table 5 does not represent the importance of each source, instead illustrating the amount of research that has been conducted in each area. However, some studies have sought to directly compare the effectiveness of various promotional tools in an industrial purchasing context (Brossard, 1998; Moriarty and Spekman, 1984; Moriarty, 1983; Jackson *et al*, 1987).

Firstly, Moriarty (1983) suggests internal sources of information such as top management and users influence industrial purchasing. Additionally, departments that have some level of expertise relating to the purchase item are likely to influence the decision. In terms of external sources of information, suppliers' salespeople and literature on the purchase item were of particular importance. Moriarty and Spekman (1984), Parasuraman (1981), Luffman (1974) and Dempsey (1978) supported this study, adding that colleagues in other companies are likely to influence the purchase decision. Jackson *et al*. (1987) is also consistent with these earlier studies, purporting the importance of salespeople and technical literature. Finally, Brossard (1998) Bunn and Clopton (1993) and Bunn and Liu (1996) also suggest that salespeople are of particular importance, as well as outside consultants, members of the organisation and other non-commercial personal sources.

It is interesting to note that these studies place an emphasis on similar promotional tools, most noticeably, personal sources of information. Perhaps the only study that provides a contrast to this prevailing view is Gilliland and Johnston (1997). It was purported that trade journals and salespeople are currently important sources of information, and that industrial advertising is not being used effectively because of a 'lack of imagination' by industrial advertisers. It was recommended that industrial advertising be used to a greater extent to influence the purchase decisions of industrial purchasers.

Studies in this area suggest that salespeople and internal sources of information will be important for farmers and processors, whereas industrial

advertising will typically be of relatively low relevance. However, farms are usually small businesses, which suggests that there may be minimal scope for influence from individuals within the organisation. It has been suggested that the information source usage will differ for small organisations, compared to larger businesses (Moriarty and Spekman, 1984). Consequentially, the applicability of most of the literature on this topic is questionable, demanding further replication.

This review has suggested evidence has been displayed for the relative importance of personal sources of information (both commercial and non-commercial), with salespeople and members of a purchaser's organisation being of particular importance. Impersonal commercial sources of information seem to traditionally occupy a rather low importance in industrial purchasing. However, it has been suggested that under certain conditions the importance of various promotional tools may fluctuate. The following section will investigate studies in this area.

4.1.1 Factors that modify the Importance of Promotional tools

Researchers have investigated the impact that the different phases of the buying process have on the relative importance of different promotional tools. Moriarty and Spekman (1984) conducted a leading work in this area, the findings of which are summarised below:

Table 6: Information Sources in each stage of the Industrial Purchase Process

Decision Phase	Personal Commercial	Personal Non-commercial	Impersonal Commercial	Impersonal Non-commercial
Problem Recognition	***	*	-	**
Search for Alternative Vendor	*	*	***	***
Vendor Selection	-	-	-	-

Number of asterix = importance of each tool in each phase,

as adapted from Moriarty and Spekman (1984)

Moriarty and Spekman (1984) imply that personal sources of information are of greater effectiveness earlier in the decision process, with impersonal sources being used more extensively in the search for vendor phase. It is likely that industrial purchasers wish to compare potentially less-biased sources of information whilst comparing varying offerings. Interestingly, this study was not able to clearly illustrate the promotional tools favoured during the final stage of the process. Moriarty and Spekman (1984) imply that communications during this final stage may be directly between the favoured supplier and the purchaser, and as such further sources of information are unnecessary. Similarly, Brossard (1998) and Thompson *et al.* (1998) also suggest that information source use follows a curvilinear pattern, increasing during the middle stages before decreasing later in the decision making process. These studies imply that personal sources of information will be of more use for choosing a breed of ram, whereas impersonal sources may be more extensively used when choosing a breeder.

Jackson *et al.* (1987) investigated further the information sources important during Robinson *et al.*'s (1967) buy-class framework. It was illustrated that different buy-classes did not seem to cause significant differences in the promotional tools preferred (Jackson *et al.*, 1987; Moriarty and Spekman, 1984). This would imply that variations in information source usage between breeders, farmers and processors are not due to the different type of decision to be made. However, variations in information source usage are suggested between various product types and industries (Dempsey, 1978; Jackson *et al.*, 1987). This implies that the context of the decision will impact upon the information sources that are preferred. Thus, the agricultural environment may cause breeders, farmers and processors to exhibit different information source preferences than studies in this area have suggested.

Speculation has also occurred over whether individual, organisational or situational differences caused variations in information source preferences. Dawes *et al.* (1998) and Katrichis (1998) imply that factors that are internal to the person, such as stake, influence and involvement in the decision mainly drive the preferences for certain types of information source. However, Workman *et al.* (1998), Moriarty and Spekman (1984), Ronchetto *et al.* (1989) and Homburg *et al.* (1999) imply that structural aspects of the organisation such as size and the level of decentralisation/formalisation of decision making dictate the information sources available for an industrial purchase decision. Finally, Money *et al.* (1998) and Money (2000) imply that situational factors such as the prevailing culture influence the promotional tools that are available and effective. It was noted that organisations in collectivist societies such as Japan exhibited a much higher use of word-of-mouth referral sources, compared to similar firms in the United States.

Although there appears to be a level of controversy in the literature, it would seem that individual, organisational and situational factors all influence the information sources available and used in the industrial purchasing process. As a result, it is likely that the information sources used by farmers and

processors will to some extent be influenced each of these variables. This is likely to create differences with respect to the information sources that are purported to be effective by each of these groups.

It has also been suggested that purchase risk and decision uncertainty impacts upon the information sources preferred. Moriarty and Spekman (1984) suggest that personal sources of information are favoured in risky situations. This is consistent with Henthorne *et al.* (1993), who imply that organisational buyers reduce risk by consulting a wide range of personal informal information sources. Bunn and Liu (1996) also note that top management and users are consulted more in high risk, uncertain decisions. Sales representatives seem to be of relatively higher importance for low risk decisions. It was also suggested that industrial purchasers consulted more sources of information for high than low risk decisions

In conclusion, there seems to be a number of variables that are thought to impact on the information sources that are favoured by industrial purchasers. Of particular interest to the current study is the impact that industrial networks have on the information sources preferred. The following section will focus more intently on this aspect of the literature.

4.2 Patterns of Information Source Usage in Industrial Networks

As suggested in the previous section, the academic literature has implied that under conditions of higher risk and uncertainty, more active information search can be observed (Johnston and Lewin, 1996; Henthorne *et al.*, 1993). This seems to contradict the suggestion that relationships with existing suppliers become increasingly important under conditions of risk or uncertainty conditions (Johnston and Lewin, 1996; Thompson *et al.*, 1998). As networks are a collection of relationships, it may be that the importance of both of these constructs increases with the level of risk. The extant body of literature suggests that network influences can be exerted at either the

individual, departmental or organisational or external level. This suggests that farmers and processors will consult a variety of organisations that they have relationships with, to reduce risk in this purchase decision. As farmers have minimal internal sources to consult, it is fair to assume that external sources of information will be of greater importance.

Firstly, a largely individualistic perspective of the analysis of influence in industrial networks has been taken in many studies (Henthorne *et al*, 1993; Bunn and Liu, 1996; Bunn and Clopton, 1993; Katrichis, 1998; Dawes *et al*, 1998). It is implied that the largest amount of influence is exerted from individuals within the organisation but outside the department, followed by individuals within the department and individuals external to the company (Katrichis, 1998; Gross, 1980). Similarly, Krapfel (1985) suggests that to influence a buying centre, industrial purchasers should encourage 'boundary role persons' to act as a supporter for their cause. This would imply that to influence the purchasing behaviour of farmers and processors, breeders should implant a member of their organisation to be consulted by the purchasers of these firms. For example, processors use on-farm 'drafters' to select stock from farmers. These individuals could influence the purchase decisions of the farmers by communicating the selection factors processors desire.

Encouraging an advocate is also a popular strategy in the stream of literature that focuses on the wider network (Money *et al*, 1998). Money (2000) suggests that the most popular type of referral source for word-of-mouth communications is the 'business insider', such as headquarters, a partner or investor. Perhaps industrial purchasers feel obliged to listen to these actors because of the relative power that they are perceived to hold. The next most important referral source was channel members/business contacts, followed by other service providers (e.g. banks) and personal contacts (Money, 2000). However, farms are often not large enough to have 'insiders' that can influence purchase decisions, so external influencers may play a greater role

than described by Money (2000). Alternatively, it may be useful for breeders to identify an advocate within the processor's organisation to forward the cause of their breed.

Finally, researchers have focused on the influence that departments have in organisations (Homburg *et al*, 1999; Workman *et al*, 1998; Ronchetto *et al*, 1989). Homburg *et al* (1999) implies that the influence of departments is largely institutional in nature, and not related to the characteristics of the managers involved. Workman *et al*. (1998), add that the influence of a department is largely related to the structural location of the department, the amount of decentralisation of decision making and the relative power of the department to make decisions. Similarly, Ronchetto *et al*. (1989) also suggests that the centrality of the buying centre and its closeness to reference groups have much to do with the influence exerted. Most of these structural concerns do not seem to be appropriate to farmers, because of the small size of the businesses concerned. However, processors are often much larger organisations where structural considerations may effect the influence of the industrial network.

4.3 Information Source Usage in Agri-Marketing

Research on the promotional tools that are particularly effective in agricultural marketing is relatively scarce. Of the studies that have been completed, few are relevant for inclusion into this review. Those that have been completed address the information sources utilised by farmers, although used by processors have not been examined. Thus, the existing literature has not taken a network approach to the study of information sources important for the purchasing of farmers and processors.

The studies that are relevant for inclusion in this review include Martin and McLeay (1998) and McLeay *et al*. (1996). The perspective of these studies is that information sources that are of particular relevance in this context include

field days (trade shows), agents, other farmers and personal records. It is interesting to note that as farms are often small businesses, there is little scope for influence from individuals within the organisation. The important areas of influence are other members of the farmer's network. This suggests that the industrial network in this context will differ from that described in the previous section.

These studies group farmers, based on how risk is perceived and responded to (Martin and McLeay, 1998; McLeay *et al*, 1996). It is suggested that disparate groups of farmers take strategically different views of risk, and this alters how they interact with their environment. McLeay *et al*. (1996) also suggests that the groups exhibit differences in the mixtures of information sources that are preferred. This is perhaps consistent with Bunn and Clopton (1993) who illustrated that strategic differences between companies will encourage these organisations to use different mixtures of information sources in their industrial purchasing decisions.

As mentioned earlier, there are also several industry reports published by a variety of interest groups. The purpose of these documents is to communicate best practice to farmers from industry groups. However, no studies have sought to formally evaluate the effectiveness or appropriateness of these documents, so the extent to which these influence the buying behaviour of farmers is unknown.

Although the studies that have been completed in this area are useful for understanding which information sources are used by farmers (McLeay *et al*, 1996), there seems to be some fundamental gaps in the existing body of knowledge. In particular, no research attempts to understand the workings of the network in which farmers interact, despite this obviously being an important source of information. This is an area that the current study will attempt to address.

4.4 Conclusion

This chapter has noted the impact that relationships and networks have on the pattern of information sources preferred by industrial purchasers. This review has implied that the existing body of literature is more appropriate for understanding processors, rather than farmers, due to the differences between these organisations. Although some research exists that attempts to distinguish the relative importance of promotional tools in an agricultural context, none exists that takes a network perspective. Any primary research seeking to identify the information sources effective for utilisation by breeders will need to understand the impact the prevailing network has on the preferences of farmers and processors.

Chapter 5 – Discussion

5.1 Introduction

This chapter seeks to conclude this review of the industrial purchasing literature. The current state of industrial purchasing literature will be summarised, before outlining several apparent gaps in this area. Finally, by illustrating how primary research can be used to fill these gaps, this review will demonstrate how this literature review has guided further research.

5.2 How this Literature Review Guides Further Research

5.2.0 The State of Existing Industrial Purchasing Literature

This literature review has illustrated that an extensive body of literature exists in the three areas examined for the purposes of this project. Firstly, the generic models of industrial purchasing were identified, to illustrate the pivotal role of selection factors in the purchasing process (Robinson *et al*, 1967). It was suggested that this process involves two separate decisions, firstly selecting different product attributes, then deciding on a vendor able to provide these attributes. It is purported that different factors are important for each of these decisions, depending on the context of the study. In particular, customer service and reliability seem to play a greater role in when deciding on attributes, whereas price, product quality and delivery policies seem to be of relative importance when choosing a vendor. Researchers have demonstrated that these factors vary in importance based upon the type of company examined and the product to be purchased.

It has been suggested that traditional models of industrial purchasing did not attempt to explain the implications of relationships and networks for industrial purchasing. Consequentially, this review summarised the major schools of

relational thought, to demonstrate the implications for industrial buyer behaviour. The review noted that relationships had both rational and sociological drivers for relationship formation. It has also been noted that relationships increasingly seem to be governed by informal behavioural 'norms' rather than contractual obligations. It was also suggested that network theory grew from the study of relationships, as it was realised that the interaction of each dyad had implications for the other relationships. Finally, it has been suggested that networks are difficult to operationalise, and as such, research should focus on a 'net' of particularly important relationships. The smallest 'net' has been termed a 'triad' in the academic literature.

One of the implications of relational paradigms noted was the impact that closer relationships and networks have on the information sources preferred in industrial purchasing. It has been suggested that personal forms of communication are of relative importance in industrial purchasing (e.g. salespeople, members of the purchaser's organisation, etc). More importantly, these communication methods seem to vary in importance based on the stage in the decision process, the type of company and the product to be purchased. It was also suggested that industrial purchasers increase communication with their informal network under conditions of increased risk and uncertainty. Researchers have also suggested that the influence of industrial networks on purchasing can vary, depending on individual, organisational or situational differences.

5.2.1 Gaps in the Existing Industrial Purchasing Literature

This review has noted that although an extensive amount of researchers have investigated industrial purchasing, it has been rare to apply these concepts to an agricultural context. One of the major gaps uncovered by this review has been in the area of agricultural marketing. This has meant that much of the literature summarised in the previous section has not been replicated in an agricultural context. As a result, there are several specific gaps that need to be addressed:

1. The selection factors that farmers/processors use to choose a breed of ram
2. The selection factors that farmers/processors use to choose a breeder of rams
3. The information sources that are used in the purchase of a ram
4. The implications of a triadic net on the purchase behaviour of farmers/processors

These issues would be a fruitful source of primary research, to further the understanding of industrial purchasing in this unique context.

5.2.2 How Primary Research will 'Fill the Gaps'

As network theory has heavily influenced contemporary industrial marketing thought, it will be necessary to take a network perspective when investigating the selection of a breed or breeder of rams. For a breeder to understand how this network impacts on their business, they must analyse this decision from both the perspective of the farmer as well as that of the processor. Understanding this purchase will involve analysing why both farmers and processors prefer particular breeds or breeders of rams, as well as being aware of the communication methods that are effective and being used in this net.

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