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**Farmer Identification and Commitment Responses to
Institutional Change in Marketing Channel Structures**

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1. Introduction

The structure of the New Zealand merino industry has been through a period of rapid organizational change and marketing innovation over the past decade. This has seen the structure of the industry move away from a publicly-regulated spot auction market structure characterised by undifferentiated product receiving pooled-equilibrium commodity prices to a dual market structure composed of both the traditional spot auction markets and a series of vertically integrated, privately controlled marketing initiatives characterised by tight contractual relationships gaining substantial premiums over the international market. The emergence of these new marketing structures has thus forced farmers to seriously re-evaluate the manner in which they identify with and commit to their market channel partners.

In the mid 1990's, the merino sector made an initial effort to move out from under the umbrella of the 'public' statutory control of the New Zealand Wool Board (NZWB) to grower control by establishing a merino-specific 'industry good' organization, Merino New Zealand Incorporated (MNZ Inc). MNZ Inc was established to focus on promotion and management of the merino sector's special characteristics and to maximise opportunities for improving returns to merino growers. MNZ Inc acted as a facilitator in the market, working along-side traditional merino grower servicing and broking companies. The new organization successfully undertook increased commercial responsibility under the NZWB, leading to the formation of Merino New Zealand Limited (MNZ Ltd) in 1998, which took over the majority of MNZ Inc's functions. Finally in 2001, MNZ Ltd and Wrightson Ltd's fine wool business entered into a commercial joint venture, which led to the privatization of the activities of MNZ Ltd. This merger established the New Zealand Merino Company (TNZMC), a privately held

joint venture that leveraged MNZ Ltd's marketing expertise and supply chain knowledge, with Wrightson's grower relationships and selling expertise, and the NZWB owned New Zealand Merino™ brand.

As a result of these changes, merino growers presently face a very different marketing landscape in which both traditional and new innovative firms offer a variety of marketing arrangements, ranging from direct auction (spot market) to highly vertically-integrated and relationship-intensive contractual arrangements that link growers to final retail brand partners. The evolving market landscape has forced growers to make a conscious decision about their merino wool marketing practices. They must decide whether to continue marketing their clip through their traditional wool brokers and channels, or to switch allegiances and market their clips through an alternative servicing company or broker. Complicating the growers' dilemma even further, successful initiatives and programs initially developed as an industry public good under MNZ Ltd were transferred to TNZMC, where they are now exclusively available to growers who market their clips through TNZMC. As a result, increased dissent and voice can be heard among some members of the New Zealand merino industry who are disgruntled with the organizational changes.

These organizational changes have confronted growers with a number of challenges and questions about how closely they identify with, and commit to, their chosen servicing company and marketing channel. Merino growers responded to the changes in a number of ways: some have exited their usual servicing company and switched the marketing of their clip to an alternative, some have stayed with their usual servicing company but are unhappy, and some others have stayed with their usual servicing company and are happy.

The purpose of this research was to determine how growers now identify with, and commit to, their respective merino wool servicing and broking companies. A mixed methods approach was implemented to effectively analyze large quantities of qualitative and quantitative data. Qualitative data collected in 16 unstructured and semi-structured interviews were synthesized into a case study analyzing changes that took place in the industry and the motivations for those changes. This was followed by an analysis of data collected in an enumerated and stratified survey of 131 New Zealand merino growers

conducted in January and February 2004 designed specifically to determine how growers identify with, and commit to, their merino wool servicing and broking company.

Using structural equation modelling techniques, the initial results indicate strongly statistically different structures in the ways in which farmers identify and commit to their respective marketing channels. Farmers who remain within the traditional marketing channels do not identify with the channel *per se*; they only identify and commit on personal relationship basis with their broker/trader who markets their wool. They view all business services provided and market outcomes as equivalent and fair as they are operating in a highly competitive spot auction market. Therefore neither their broker or themselves can affect outcomes. Alternatively, farmers who have switched to the highly integrated and contract controlled channels strongly identify and commit to their marketing channel partners on both a business and personal relationship basis.

Interestingly, these results show strong positive business commitment when things are going well, but the reverse when perceptions do not meet expectations. Thus these farmers expect their marketing channels to out-perform expectations and if they do not they become vocal and begin looking for alternatives. Similarly, the way in which they commit differs, the new marketing channels provide a mechanism to learn about the marketing opportunities available but also provide the farmers an opportunity bypass the marketing channel if expectations not meet. This places the marketing channel in a precarious Catch-22 position of being required to continuously provide up-to-date information about the market to ensure farmers maintain realistic expectations and thus ensure that they remain. At the same time, there are pressures to not give away too much information thereby allowing them to operate by themselves.

2. New Zealand Merino Industry

The New Zealand wool industry is significant with 15,290 commercial sheep farmers producing 172,680 tonnes of scoured wool from 39.15 million sheep during the 2003/2004 season (Miekle, 2004). The industry encompasses a large number of breeds and wool types ranging from the ultra-fine merino wools through to strong crossbred wools. Wool is commonly classed into one of three 'generic' categories of merino, mid-

micron, or crossbred with the crossbred class dominating the New Zealand wool clip by volume (Figure 1).

The NZ merino category is the smallest component of the industry accounting for approximately 2.8 million merino sheep and about 7% of the wool clip by volume, however it contributes a disproportionate amount by value, approximately 15% of total industry revenue (S.Champion *pers. comm.*).¹ The merino is unique as they are a single-purpose breed grown specifically for the high quality wool they produce. Some international purchasers consider NZ merino wool “unequivocally the best in the world in terms of purity, color, strength and vegetable matter content” (Brakenridge, 1995).

The merino sheep possesses many unique qualities that separate it from other commercially farmed breeds. Their hardiness allows them to thrive on New Zealand’s extensive high country properties where they endure long, hot and dry summer months, followed by harsh, cold and snow-covered winter months. Most other sheep breeds could not be profitably farmed in this environment.

Merino properties rely on merino wool sales as their main source of income, accounting for between 50 and 70 percent of each unit’s gross farm income (GFI). This variation is largely a factor of wool price (Greer, 2003). Thus, merino growers’ reliance on wool income is very high, especially in comparison to the average New Zealand sheep and beef farm in which wool accounts for approximately 18% of GFI (MAF, 2003).

Today merino growers can market their wool clips through a range of marketing channels from private wool buyers (often a fragmented channel in which communication between participants is low) to tight contractual agreements, characterized by highly integrated supply channels which allow for increased communication and information transfer.

Traditionally, however, merino growers could only sell their wool through auction markets. This exposed the merino grower to large market risk as the international price for merino wool fluctuated markedly within and between seasons as international supply and demand changed. The major factor causing fluctuation in supply is climate, whereas demand fluctuates largely in response to movements in foreign exchange rates, in

¹ Similarly on the international scene the New Zealand merino industry is also very small in size, accounting for only 1.5% of all merino wool produced in the world (McKinsey and Company, 2000).

economic climates, and in what countries are ‘in the market’. The volatility in price that results is noticeably higher for fine wools as compared to stronger wools.

3. Impetus for Change

The New Zealand (NZ) wool industry has undergone a substantial amount of change since the 1950’s. Recognizing the market shortage during the Korean War, the NZ government established the first set of production incentives (subsidies and supports) for NZ sheep producers. Once established these incentives resulted in sheep numbers rising to approximately 70 million sheep by the mid 1980’s and wool production responded similarly.

The 1984 deregulation of the NZ economy changed this picture dramatically. On winning the elections the new Labour government was forced to extensively deregulate and open “Fortress New Zealand” to world market forces.. As part of the deregulation efforts the government immediately removed all subsidizes and supports to the NZ sheep industry, forcing farmers to seriously re-evaluate what production system best suited their production base. Many quickly recognized that meat production was more profitable than wool. Consequently, since 1984 sheep numbers and wool production have dropped by more than 40% from levels in the mid 1980s.

During this process farmers soon recognized that the traditional market promotion strategies of the New Zealand Wool Board (NZWB) were misaligned with the majority of their needs. Under the International Wool Secretariat (IWS)² wool promotion had followed a generic approach that focused on promoting fine wools for the apparel industry under the “Woolmark” brand. This suited the Australian fine wool producers; however, it did not suit New Zealand’s mid to coarse wool producers. Consequently, the NZWB pulled out of the IWS and established their own promotion and branding organization, Wools of New Zealand (WoNZ)³, to promote NZ wools to the industrial textiles market.

² The NZWB was a founding member of the IWS in 1943.

³ Following its 1994 exit from the IWS, the NZWB relaunched itself as Wools of New Zealand.

These events provided little assistance to the NZ merino growers, as the new industry body was not promoting merino wool. Under the old IWS strategy, merino growers were content, even though they paid a disproportionate amount of the levys⁴ towards the industry body, as the majority of the IWS promotion strategies focused on their class of wool, fine merino wool. This no longer held. Consequently, merino growers began questioning the suitability of this organization to meet their marketing and promotional needs.

In addition to this, a number of issues relating to the overall wool industry's structure, NZWB marketing strategies, and on-farm production issues contributed to the problems merino farmers faced within the industry.

- The traditional auction system allowed the high quality merino wool to be bundled, mixed and blended with poorer quality wool to raise the overall quality. As a result Merino growers faced a severe pooled equilibrium problem.
- Without suitable marketing mechanisms to either signal high quality to buyers, merino growers faced price discounts on the international market.
- There was also a general oversupply problem caused by a range of market support and intervention programs, principally the Australian Wool Reserve Price Scheme. At its peak there was a stockpile of over 4.7 million bales and \$42.8 billion in associated debt (Carter and MacGibbon, 2003).
- Effective competition from alternative natural and synthetic fibers increased. Although wool had performance and attribute advantages, these new fibers had production advantages related to consistency, volume, and ease (Smith and Jacobson, 2002; Baillieu *et al*, 2001).
- The high country merino sheep stations were also facing financial and production pressures through increasing rabbit numbers (Williams, 1998) and the continual spread of Hieracium, a highly invasive noxious weed (Rose *et al*, 1998).

⁴ Under NZ Wool Act of 1944, the NZWB was able to impose levys against farmers to support industry activities. These levys were charged as a percentage of the value of the wool clip, hence merino farmers paid a disproportional amount of the levys to support the industry body, the NZWB.

So why didn't they exit the merino industry and switch land use, change production systems, or leave farming altogether? The answer is that in many instances they could not. Many merino properties are based in very hard, high country areas that experience extreme cold during the winter and extreme dryness and heat during the summer. Given the basic resource base of the land and of the environment, only merinos can be farmed on many parts of the properties. This dilemma leaves growers no option to switch their production systems to cattle, deer, or another breed of sheep.

As a result of this asset specificity and inability to manipulate output, many merino growers face a highly inelastic supply curve in which production cannot be manipulated in the short-term. Accordingly, they are unable to react very quickly to shifts in product prices, due to biological/production lags, and are forced to manage the volatility that occurs in the market for merino wool.

4. The Initiation of Change

Recognizing these problems, the NZ merino growers started considering the establishment of a new merino-specific organization to better serve the needs of the New Zealand merino industry (Floris, *pers. comm.*). It was proposed that NZWB levies paid by merino growers should be channeled back to a new merino-specific organization for investment in marketing and R&D specific to New Zealand merino wool (Greer, 2003). Thus, in October 1994, Merino New Zealand Incorporated (MNZ Inc) was established as a merino grower owned incorporated society, to represent merino grower interests and to “focus on the promotion and management of merinos special characteristics to maximize the opportunities for improving returns to growers” (NZ Farmer, 1994). Initially established as an autonomous business under the Wools of New Zealand (WoNZ) structure, MNZ Inc received a proportion of the NZWB levies paid on wool 23.5 micron and finer and was contracted to drive the merino industry forward, while final responsibility for merino industry funds remained with the NZWB (Wallace, 1994). Over the next couple of years, this organization began numerous market development initiatives, including the establishment in September 1996, of the “New Zealand

Merino™” brand as a tool to differentiate New Zealand merino wool products. WoNZ owned the brand, exclusively licensing its use to MNZ Inc.

In 1997, a major dispute erupted between WoNZ and MNZ Inc, as WoNZ worried that MNZ strategies were potentially undermining their WoNZ Fernmark strategy⁵ (Greer 2003). MNZ Inc strongly disagreed and eventually won their dispute, so in early 1998, the NZWB announced its intention to separate the statutory authority of the NZWB from targeted business units, WoNZ and MNZ Inc (Greer, 2003). As a result, a new merino-specific organization, Merino New Zealand Ltd (MNZ Ltd), was established as a 50:50 joint venture between the New Zealand Wool Group⁶ and MNZ Inc, and would be responsible for the worldwide marketing of New Zealand merino wool and the management of the New Zealand Merino™ branding strategy (Greer, 2003). Effectively, MNZ Ltd continued with and built on work previously conducted by MNZ Inc, whose role was then reduced to administrative functions.

As grower dissatisfaction continued, the NZWB commissioned McKinsey and Company to “evaluate options and develop recommendations to improve grower profitability” (McKinsey and Company, 2000). The reports recommendations led to considerable change in the New Zealand merino sector, the most significant being the establishment of a new commercial merino wool marketing business with exclusive access to MNZ Ltd’s assets (McKinsey and Company, 2000).

5. The New Zealand Merino Company (TNZMC)

In a grower referendum, New Zealand wool growers voted in favor of the McKinsey and Company’s recommendations. In response, MNZ Ltd began to investigate the establishment of a new commercial merino wool marketing company. Initially, MNZ Ltd approached all major merino wool brokers about forming a single merino marketing company that, if agreement could be reached, could take in all the major merino broking and servicing companies (Floris, *pers. comm.*). Wrightson was the only wool broker that

⁵ A Wools of New Zealand Branding strategy that originally spanned the entire New Zealand wool clip, now focuses on interior textiles.

⁶ The New Zealand Wool Group was an umbrella organization established under the NZWB in 1998.

showed significant interest. Wrightson and MNZ Ltd entered into discussions and a lengthy consultation process, culminating in the establishment of The New Zealand Merino Company on 1 July 2001. MNZ Ltd and Wrightson formed TNZMC as a joint venture, 35% owned by Wrightson and 65% by New Zealand merino growers, whose interest in the company was held by another new organization, Merino Grower Investments Limited (MGIL)⁷. The formation of TNZMC combined many facets of the New Zealand merino sector: the New Zealand Merino™ brand; MNZ Ltd's marketing expertise and supply chain knowledge; Wrightson's grower database, wool selling, and logistics skills and the set of forward contracts Wrightson held with brand partners.

TNZMC continues to conduct many of the activities that MNZ Ltd previously did, including national and international marketing of merino wool. The organization utilizes a number of innovative marketing methods, and conducts commercial research in a number of areas related to creating value for the New Zealand merino industry.

In addition to traditional handling and broking fees, TNZMC charges its growers an innovation fee of 4% of the value of merino wool sold. Thus, it costs significantly more to market wool through TNZMC than traditional servicing and broking companies, who only charge the traditional handling and broking fees. TNZMC also has an exclusivity clause, which restricts growers to selling all or none of their merino clip through TNZMC. This restricts the amount of 'free riding' that can happen, preventing growers from marketing select high value lines through TNZMC and then marketing the rest of their clip through a lower cost alternative broker.

6. Consequences of Change

Following the establishment of TNZMC, the New Zealand merino sector's marketing landscape changed dramatically. Growers now have the option of marketing their clips through a new, innovative company that invests in national and international promotion of New Zealand merino wool and conducts innovative research that create value for

⁷ MGIL was formed to hold the majority shareholding, on behalf of all merino growers, in TNZMC. The role of MGIL is to monitor the performance of TNZMC, and act as a sounding board and guardians of merino grower interests in TNZMC.

channel members. As a consequence, merino growers must choose which company they should market their merino clip through, complicated by the fact that TNZMC holds exclusive access to assets and initiatives that all New Zealand merino growers invested in the initial development of through their NZWB levies. Growers not marketing their clips through TNZMC are excluded from directly benefiting from those assets and initiatives, although they receive profit indirectly from TNZMC's activities through their shareholdings in MGIL.

Growers marketing their clips through alternatives to TNZMC also benefit by 'free riding' on the activities of TNZMC. Growers marketing their clips through TNZMC are required to pay an 'innovation fee' to fund the promotional and research activities of TNZMC. These promotional activities that TNZMC growers fund raise the awareness of 'New Zealand merino' as a product, and hence all New Zealand merino growers benefit to some extent, no matter which broking company they market their clip through.

Following the restructuring of the industry there has been some movement, both to and away from, most major merino wool servicing and broking companies. The most interesting of the movements is the movement of some ex-Wrightson growers away from TNZMC, and the movement of some PGG and other major broking company's growers to TNZMC. Although there has been some switching, the majority of growers have stayed with the company through which they have traditionally marketed their clips, whether that has involved moving to a new organization or not.

Overall, a grower's decisions about which company they should market their clip through is a complicated one, in which a number of factors are considered. The most significant of those factors are:

- The grower's feeling of 'needing' to stay with or join a certain broking or servicing company, and retain or gain access to their assets and capabilities;
- The grower's feeling of 'wanting' to stay with or join a certain broking or servicing company, and retain or gain access to their assets and capabilities;
- How closely the company matches the grower's expectations in a business sense; and,
- How closely the company matches the grower's expectations in a social sense.

7. Organizational Identity and Identification

The series of organizational and institutional changes that have taken place in the New Zealand merino sector have forced merino growers to make some difficult decisions about what company they market their merino clip through. The decision is complicated by the fact that to access the capabilities and assets of the former MNZ Ltd, growers now have to sell their clips exclusively through TNZMC, which for some growers involves breaking traditional relationships with their wool servicing and broking firms. As a result, some growers have shifted to TNZMC to access its assets and capabilities, while some who originally moved to TNZMC have now shifted away to one of the traditional wool broking companies that better fits their needs.

Identity and grower identification provides a suitable theoretical framework for analyzing growers 'fit' to their organization and why growers market their clips through each of the servicing and broking companies they do. Specifically, an organization's identity is evident in the answer to the question "what kind of organization is this?" (Albert and Whetten, 1985, p. 292), while organizational identification is "the degree to which a member defines him - or her-self by the same attributes that he or she believes define the organization" (Dutton *et al*, 1994, p. 39). Organizational identification and its linkages with identity have been used to explain a number of organizational factors, including cooperation and citizenship (Dutton *et al*, 1994), loyalty (Mael and Ashforth, 1992), and commitment (Foreman and Whetten, 2002; Westgren *et al*, 2004). With the exception of only a few studies (Mael and Ashforth (1992, 1995), Foreman and Whetten (2002) and Westgren *et al*, (2004).), very little empirical work has been conducted on measuring organizational identity and identification.

Identity Congruence

Organizational identification is conceptualized as a comparison process between what a member perceives the identity of the particular organization to be and what that member thinks the identity should be, commonly referred to as identity congruence (Foreman and Whetten, 2002). A member compares his or her perceptions of an organization's *current identity* (beliefs about the existing character of the organization) with his or her

expectations of its *ideal identity* (beliefs about what is desirable, informed by the member's sense of self); and the resulting *identity gap / congruence* (the cognitive distance between the current and ideal identity claims) significantly affects a member's level of involvement with the organization (Foreman and Whetten, 2002). The smaller the identity gap, the greater the congruence between the individual's and the organization's identity, and the easier it is for the individual to identify with the organization. This relationship is illustrated below in Figure 2. People who strongly identify with the organization are likely to focus on tasks that benefit the whole organization rather than purely self-interested ones. This is organizational citizenship behavior (Dutton, *et al*, 1994).

The *current identity* can also be considered as perceived organizational identity. It is the aspect that attracts or fails to attract the individual and, if they are attracted, determines the strength of that organizational identification (Dutton *et al*, 1994). Additionally, the attractiveness of the perceived organizational identity varies with a member's length of tenure and intensity of their exposure to the organization (Dutton *et al*, 1994). "Intense and long contact with an organization (as reflected by greater tenure) increases the level of the organization's identity, contributing to a greater degree of identification" (Dutton *et al*, 1994, p. 248).

Organizational Commitment

Commitment is another factor that comes into a grower's decision of whether to stay with their current wool servicing and broking company, or to switch to an alternative.

Commitment has been defined in a number of ways, although definitions of organizational commitment generally fall into one of two main categories: *attitudinal* and *behavioral* (Foreman and Whetten, 2002).

The attitudinal view focuses on the emotional attachment members have to their organization. Attitudinal commitment is seen as a psychological attachment, reflecting positive thoughts and beliefs about the current relationship (Foreman and Whetten, 2002). It is generally presented as a desire for relational continuity (Anderson and Weitz, 1989) and as a long term orientation (Brown *et al*, 1995). This attitudinal commitment is measured by tapping into the affective content of the member's relationship with his or

her organization (e.g. Meyer and Allen, 1984; O’Riely and Chatman 1986; Foreman and Whetten, 2002).

The behavioral view emphasizes a person’s commitment to specific patterns of behavior in their relationship with the organization (Foreman and Whetten, 2002). This view argues that the investments an individual makes in the organization (in terms of time, effort, relationships, political capital, knowledge, experience, etc.) constitute for them sunk costs or side bets, and thus raise the stakes involved in leaving (Foreman and Whetten, 2002). This is a rational evaluation of the costs of discontinuing the relationship (Sharma, *et al.* 2001). Therefore, behavioral commitment is largely a structural phenomenon, and that researchers measure in an assessment of the member’s investments in, exchanges with, and/or dependence on their organization (Foreman and Whetten, 2002).

Meyer and Allen (1984) assessed member commitment based on the attitudinal and behavioral constructs *affective* and *continuance commitment*. Affective commitment refers to the degree to which a member “wants” to remain in the organization, effectively related to the member’s positive feelings about their involvement in the organization, as well as their expressed sentiments of loyalty and desire to help the organization be successful. Continuance commitment captures the degree to which the member “needs” to stay, which focuses on a member’s likelihood of remaining with the organization, given current opportunities and options to leave.

The attitudinal and behavioral commitment constructs do not operate in tandem. Although a member may want to leave their organization, they can not always act on their preferences (Foreman and Whetten, 2002). Within the behavioral construct a member’s affiliation to his or her organization is less of a function of identification and attachment and more a product of resource dependence (Foreman and Whetten, 2002). This can work the other way though, as a number of studies have found that affective commitment is a stronger and more effective construct within the realm of commitment (Foreman and Whetten 2002; Sharma, *et al.* 2001). Hence, in each situation the unique dependencies and structures have a major influence on what a member may do, even if they want to do differently.

Interaction between Identity and Commitment

Foreman and Whetten (2002) proposed that an ongoing identity comparison process affects member attitudes toward their cooperatives, whereby members evaluate the congruency of their perceptions of the organization's current identity with their expectations of its ideal identity. They went on to propose that the normative and utilitarian comparison identity gaps affect a member's commitment to his or her cooperative.

Initially, they found that normative and utilitarian identity comparisons are separate and distinct constructs. Additionally, a member's perceptions of his or her organization's current normative and utilitarian identity and the interaction between their current and ideal identities affect that member's affective commitment to his or her organization. An analysis of the affect of continuance commitment produced some different results. The identity comparison terms accounted for only a small, and statistically insignificant increase in continuance commitment variance. Thus, continuance commitment is affected by factors other than identity. Overall, they concluded that organizational members cognitively compare their identity perceptions and expectations, and the resulting level of identity congruence significantly affects their level of organizational commitment. Foreman and Whetten (2002) also stated that identity-based models may be a powerful means of explaining many aspects of member-organization relationships.

Westgren *et al* (2004) proposed that an individual member compares their perceptions of an organization's current identity with their expectations regarding its ideal identity and the resulting identity gap significantly affects a member's level of involvement within the organization. They found an increase in the congruency of normative commitment leads to an increase in affective and continuance commitment. However, the member is less committed to stay with their cooperative organization when utilitarian identity expectation and perceptions become more congruent. Thus, cooperative members place positive value on locating themselves in a cooperative where they find congruence with their normative identity expectations. To the degree that those expectations are not met, cooperative members will defect.

8. Mixed Method Analysis Approach

To analyze how merino growers have responded to these changes a mixed methods research approach was employed. Mixed methodology studies combine qualitative and quantitative approaches within the research methodology of a multiphase study (Tashakkori and Teddlie, 1998). Specifically, a QUAL/QUANT sequential mixed methods design was utilized, starting with qualitative data collection and analysis (case study), and followed by a separate quantitative phase (survey research) and analysis (Tashakkori and Teddlie, 1998).

During the initial stages of this research project case study research was employed to gain an understanding of the New Zealand merino industry: what it is today, what it was in the past, and why and how it has changed (Stake, 1995; Westgren & Zering, 1998). During this process a number of phenomena related to how growers had responded to these changes were identified as being instrumental⁸ and thus requiring further research. Consequently a primary survey data collection process was initiated to examine how merino growers have responded to the changes in the merino industry, and to specifically measure how they identify with, and commit to their wool servicing and broking companies.

An extensive survey mechanism was developed and pilot tested in New Zealand during the fall of 2003. After adjustments two researchers conducted 131 personal grower survey interviews between December 2003 and February 2004. A random sampling method was used to select growers from an industry list that contained all merino growers that farmed more than 250 merino sheep at 30 June 2001. This list of 786 merino growers is considered the most complete grower list available, although it contains some growers whose primary interests are not in the merino industry (Greer, 2003). Of the 738 South Island merino growers listed, 350 were selected randomly and were sent a letter

⁸ In an intrinsic case study the researcher has an intrinsic interest in that particular case and wants to learn more about it (Stake, 1995). The purpose is not theory building or understanding some abstract construct or generic phenomena, but because the case is of intrinsic interest to the researcher (Stake, 1998). The context is of primary, not secondary, importance. In instrumental case studies the researcher has a research question or need for general understanding that they feel a particular case may fulfill (Stake, 1998). The context of the case is of secondary importance. The case plays a supportive role in facilitating an understanding of something else, an issue, or a refinement of theory (Stake, 1998).

informing them of the research project and that they would be contacted and asked to participate. These growers were randomly phoned and asked to participate. On having made, or attempted to make contact with all the growers who were sent letters, attempts were then made to contact the other 388 South Island merino growers who were on the list, but hadn't been sent letters. During this sampling process phone contact was made with a total of 517 growers; 225 of those contacted no longer farmed merinos, or farmed less than 1,000 merino ewes. This left 292 merino growers suitable for inclusion in this research, from which 131 (44.8%) were surveyed. Within time and budget constraints, a sample of 131 growers was the maximum obtainable. Each response was entered into Excel, cleaned and cross-checked and then exported to SSPS for data analysis.

Following Foreman and Whetten (2002) and Westgren *et al* (2004) exploratory factor analysis (EFA) was conducted to compress the number of measures related to identity and commitment. Following the extraction and identification of latent variables using EFA, confirmatory factor analysis (CFA) models were constructed with the relevant measured variables loading onto each of the latent components. The purpose of these CFA models was to confirm the latent variables extracted in the EFA. Identity and commitment models were then adopted from Westgren *et al* (2004) to test how well these latent variables explained merino grower identity and commitment.

The causal relationship between identity congruence and grower commitment was assessed using Structural Equation Modeling (SEM).⁹ After developing a parsimonious model for merino growers as a whole, the sample was then divided into two groups based on the servicing and broking company that each grower sells the majority of their merino clip through. The groupings are: Group TNZMC (n = 85): The New Zealand Merino Company growers; Group OTHER (n = 46): PGG (n=35), John Marshall and Co (n=4),

⁹ Structural Equation Modeling is a combination of path and confirmatory factor analyses that allow the interpretation of the causal effect between latent variables (unmeasured) that relate to measured variables (Klem, 1995). The measurement part of the model corresponds to factor analysis and depicts the relationships of latent variables to the observed variables. The structural part of the model corresponds to path analysis and depicts the direct and indirect effects of the latent variables on each other (Klem, 1995).

Yaldhust Wools (n=3), Primary Wool Cooperative (N =1), and Wool Marketing Marlborough/Nelson Ltd (n= 1).¹⁰

The first step in SEM is to specify a model based on previous knowledge of the relationship under analysis. A model of identity congruence's direct effect on member commitment to their cooperative organization was adopted from Westgren *et al* (2004). In the model normative identity is modeled as a latent variable induced by the normative perceptions and normative expectations of the grower. A graphical form of the modeling of the latent identity variable is presented in Figure 2. This induced variable is equivalent to the identity gap. Likewise, a utilitarian identity gap variable was induced by the utilitarian perceptions and expectations variables.

The next step is to get parameter estimates, which are estimates of the coefficients representing direct effects and of the coefficients representing variances and covariances of unmeasured variables. A maximum likelihood procedure was used to determine the estimates that most nearly reproduced the matrix of observed relationships. This was undertaken in AMOS 4.0, a CFA and SEM software package (Arbuckle and Wothke, 1995). AMOS 4.0 produced parameter estimates in the form of path diagrams depicting the regressions and coefficients between the latent and measured variables within the model.

The fit of the model, or how closely the relationships implied by the stated model match the observed relationships was then assessed using the chi-square statistics and global fit measures reported by AMOS 4.0. Westgren *et al* (2004) warn that global fit measures should be used with caution and only when combined with visual examination of the standardized discrepancy matrix to see if the misfit is driven by a few large elements or a general scatter of discrepancies.

9. Results of Structural Equation Modeling¹¹

¹⁰ SEM also requires a large sample sizes. The input matrix should be based on 100 – 150 cases with between 5 to 10 cases per parameter estimated (Klem, 1995). Thus, over 150 cases are required to test the prescribed model. The sample size is below these recommended minimums and considered in the interpretation of results.

Following computation of the EFA and CFA's for identity and commitment, a structural equation model was constructed to analyze the causal relationship between grower identity congruence and grower commitment, and how the relationships differ between TNZMC and OTHER growers. The SEM employed was adopted directly from Westgren *et al* (2004), utilizing similar measured variables to construct the relevant latent variables of identity and commitment. The relationship between changes in grower identity perceptions and commitment for TNZMC and OTHER companies is presented in Figure 3. The relationships presented illustrate the effect that a drop in a grower's identity expectations relative to the perceived identity level, or a rise in the perceived identity level relative to a grower's identity expectations will have on grower commitment. The arrows represent both the strength of the effect and their nature. Thickness of arrow indicates the strength of effect with thicker arrows indicating a stronger effect, while arrow color indicates the direction of the effect with darkest arrows signifying an increase in, and lighter arrows signifying a decrease in the relevant commitment latent variable.

A number of interesting relationships between identity and grower commitment for TNZMC and OTHER are presented in Figure 3. A perceived increase in TNZMC's business-like (affective) identity construct has a positive impact on grower commitment, while a perceived increase in the family (normative) identity latent construct has mixed influences on commitment. A perceived increase in family like identity causes TNZMC growers to feel more of a *need* to stay (continuance commitment) with TNZMC, but also makes them feel less of a *want* to stay (affective commitment).

The business like identity of TNZMC has a very significant effect on TNZMC growers' level of commitment, influencing growers' *need* to stay (continuance commitment) and their *want* to stay (affective commitment). This relationship is largely a function of TNZMC growers' business focus. As TNZMC positively moves nearer to, or further exceeds the growers' expectations of business focus, growers increasingly feel that TNZMC is a good fit for them, and they develop a sense of belonging and an emotional attachment to TNZMC. As a result their *want* to stay rises. TNZMC growers' higher

¹¹ For complete coverage of the empirical results and methodology, see Stevenson (2004) Stakeholder responses to institutional change in the New Zealand Merino Industry, MS Thesis, University of Illinois. Urbana, IL.

want to stay is coupled with more of a *need* to stay, as essentially TNZMC is the only company that offers the same level of professionalism and specialized expertise across a number of areas, and thus, TNZMC growers don't view the traditional wool servicing and broking firms as acceptable alternatives.

On analysis of the relationship between TNZMC growers' family like (normative) identity, and commitment, it is apparent that family-like identity has a significant influence on grower commitment. As TNZMC positively moves nearer to, or further exceeds growers' expectations of family focus, TNZMC growers feel more of a *want* to stay (affective commitment), while at the same time they feel less of a *need* to stay (continuance commitment). Growers feel less of a *need* to stay as they believe that the relationships they have developed, and the knowledge that they have acquired through their association with TNZMC has created the option for them to consider marketing their clips themselves, bypassing TNZMC; marketing their clips themselves was an option that six TNZMC growers casually mentioned as their only available marketing alternative. Although growers' continuance commitment decreases, their affective commitment increases, as they *want* to continue to access the same relationships and knowledge pools that they currently do through TNZMC.

The effect of a relative change in perceived identity on grower commitment is markedly different within the OTHER model. OTHER companies' business-like (affective) identity construct has an insignificant impact on grower commitment. Although utilitarian identity has no effect on grower commitment, the family (normative) identity construct has mixed influences on commitment, causing OTHER growers to feel more of a *need* to stay (continuance commitment) with OTHER, but also making them feel less of a *want* to stay (affective commitment).

The business like (utilitarian) identity of OTHER has an insignificant effect on OTHER growers' level of commitment, both in terms of their *need* to stay (continuance commitment) and their *want* to stay (affective commitment). This is a result of the highly competitive market that OTHER companies operate in, in which all companies provide similar services to growers, charge similar fees, and provide similar returns to their growers. For example, if an OTHER grower's perceived return is less than what they

expected it is likely to be a market issue that all OTHER growers and companies were exposed to, hence there is little differentiation to identify with. The second identity construct, family-like (normative) identity has an interesting effect on OTHER grower commitment. As OTHER positively moves nearer to, or further exceeds growers' family identity expectations the growers feel more of a *need* to stay (continuance commitment) with OTHER, however growers also feel less of a *want* to stay (affective commitment). Although OTHER companies have very similar business identities imposed on them through the competitive market structure, they are able to differentiate themselves from alternative OTHER companies with their family like (normative) identity.

Thus, growers *need* to stay with OTHER because they feel that the family identity of their company is unique. As OTHER moves closer to, or exceeds growers' family like identity expectations growers feel that there is no other company that can provide the same "family-like identity fit", and hence they feel there are no alternatives and that they *need* to stay with OTHER. Although OTHER growers feel more of a need to stay, the change in identity also makes them feel less of a *want* to stay. As OTHER places more emphasis on the family like (normative) identity of the company OTHER growers begin to feel that the company is putting too much emphasis on activities that benefit all OTHER growers, rather than the individual grower; they feel that OTHER is over servicing its growers as a group, which may lead to under service of the individual. Subsequently, OTHER growers want to leave to an alternative that better serves them as an individual, rather than a member of the group.

These findings are somewhat different to those of Westgren *et al* (2004) who investigated the causal effects of identity congruence on cooperative members' commitment. They found that a positive change in normative perceptions relative to expectations would increase commitment, while a positive change in utilitarian perceptions would cause cooperative members' commitment to decrease. These causal effects are almost the exact opposite to those within TNZMC model, where a positive change in utilitarian perceptions would increase grower commitment and an increase in normative identity perceptions would decrease growers' levels of continuance commitment. This is a logical difference as cooperatives are thought of as a 'family-like' organization, whereas in comparison TNZMC is a commercially focused organization. Turning to the second

grouping, OTHER growers identify with their respective companies in a manner somewhere between TNZMC and the cooperative organizations, with utilitarian identity having mixed, but insignificant effects on grower commitment, while normative identity also has mixed effects.

10. Conclusions

The purpose of this research was to summarize and analyze the organizational and structural changes that took place in the New Zealand merino industry and to determine how growers now identify with and commit to their respective merino wool servicing and broking companies. A mixed methods approach was implemented to effectively analyze large quantities of qualitative and quantitative data. Qualitative data collected in 16 unstructured and semi-structured interviews were synthesized into a case study analyzing changes that took place in the industry and the motivations for those changes. This was followed by an analysis of data collected in the interview survey of 131 New Zealand merino growers. The survey data included how growers identify with and commit to their merino wool servicing and broking company. The analyses included exploratory factor analyses, confirmatory factor analyses and structural equation models. Underlying latent variables of grower identity and commitment were extracted and were modeled to examine the causal relationship between identity congruence and commitment.

Analysis of the data illustrated that the majority of merino growers market their clips through either of The New Zealand Merino Company (TNZMC) or Pyne Gould Guinness (PGG), and that significant differences exist between growers who supply the different servicing and broking companies. Differences are apparent over a range of variables, including, merino wool production, flock size, and expectations for the future of their merino clips.

An exploratory factor analysis showed that merino growers identify with and commit to their merino servicing and broking company based on underlying latent constructs. A confirmatory factor analysis showed that merino growers supplying different companies (TNZMC vs. OTHERS) identity measures have differing effects on their business-like (utilitarian) and family like (normative) identity constructs. This was also observed in

grower commitment, with differences existing between the latent variables of affective commitment, continuance commitment, voice and few marketing alternatives.

Finally, a structural equation model was adopted from previous research and subsequently fitted to each of the two groups' data sets. This presented interesting results in which TNZMC grower's business like and family like identity congruencies have a major influence on TNZMC growers' commitment to their company, both in terms of their want to stay and their need to stay. The relationship is very different for OTHER growers, whose business like identity has an insignificant influence on their commitment levels, although their family like identity has mixed effects, positively influencing OTHER growers' need to stay while negatively influencing their want to stay.

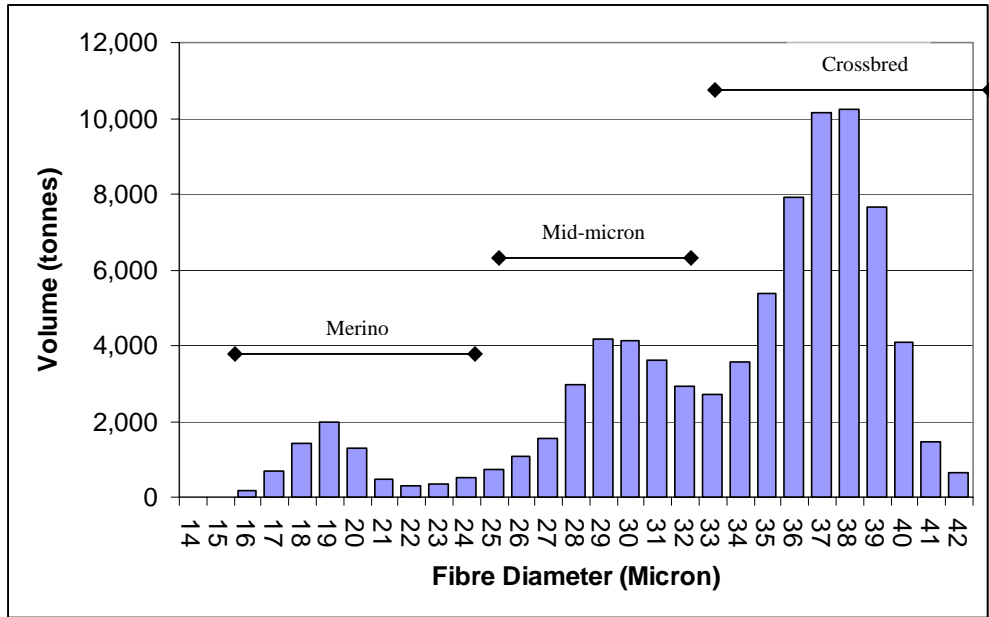
11. References

- Albert, S. and Whetten, D.A. (1985). Organizational Identity. B. Staw and L.L. Cummings, [eds.]. *Research in Organizational Behavior* 7, 263-295.
- Anderson, E. and Weitz, B. (1989). Determinants of Continuity in Conventional Industrial Channel Dyads. *Marketing Science*, 8:4, 310-323.
- Baillieu, J., Dowse, J. and B. Ter Wal (2001). A New Wool Order. *The McKinsey Quarterly*, No. 1, 2001.
http://www.mckinseyquarterly.com/article_print.asp?ar=994&L2=11&L3=59
[Accessed 4th January 2003]
- Brakenridge, J.D., (1995). Merino New Zealand. *Wool – Palmerston North*, 1995 8:7, pp. 37-38.
- Carter, B. and J. MacGibbon. (2003). *Wool: A History of the New Zealand Wool Industry*. Ngaio Press, Wellington, New Zealand.
- Dutton, J.E., Dukerich, J.M. and Harquail, C.V. (1994). Organizational images and member identification. *Administration Science Quarterly*. 39, 239-263.
- Foreman, P.O. and D.A. Whetten (2002). Members' Identification with multiple-identity organizations. *Organization Science* 13:6 p. 618-635.

- Greer, G. (2003). Review of the New Zealand merino industry: a report to Merino New Zealand Inc. *Agribusiness & Economics Research Unit, Lincoln University*. August 2003.
- Mael, F. and Ashforth, B.E. (1992). Alumni and their Alma Mater: A Partial Test of the Reformulated Model of Organizational Identification. *Journal of Organizational Behavior*, 13:2, 103-123.
- Mael, F. and Ashforth, B.E. (1995). Loyal from Day One: Biodata , Organizational Identification, and Turnover Among Newcomers. *Personnel Psychology*, 48(2), 309-333
- MAF (2003). National Sheep and Beef Budget. Accessed at: http://www.maf.govt.nz/mafnet/rural-nz/statistics-and-forecasts/farm-monitoring/2003/sheep-and-beef/sheep-and-beef-2003-69.htm#P14235_271213
Accessed on: 3 July 2004.
- McKinsey and Company (2000). *Report to New Zealand wool growers on improving profitability*. June 2000.
- Meyer, J. P., & Allen, N. J. (1984). Testing the "side-bet theory" of organizational commitment: Some methodological considerations. *Journal of Applied Psychology*, 69, 372-378.
- Miekle, A. (2004). Competitiveness through cooperation – the role of producer funded organizations and activities in New Zealand Sheep farming. *Proceedings of the 7th World Sheep and Wool Congress*. Quebec City, Canada. July 2004.
- New Zealand Farmer (1994). Fine-wool Growers to fund New Body. *The New Zealand Farmer*. October 12, 1994: p13.
- O'Reilly, C.A. and Chatman, J. (1986). Organizational commitment and psychological commitment: The effects of compliance, identification, and internalization on prosocial behavior. *Journal of Applied Psychology* 71, 492-499
- Rose, A.B., Basher, L.R., Wiser, S.K., Platt, K.H. and Lynn, I.H. (1998). Factors predisposing short-tussock grasslands to *Hieracium* invasion in Marlborough, New Zealand. *New Zealand Journal of Ecology* 22(2): 121-140.
- Sharma, N., Young L., & Wilkinson, I. (2001) 'The structure of relationship commitment in interfirm relationships', paper presented at *Industrial Marketing and Purchasing Conference*, BI: Norway.

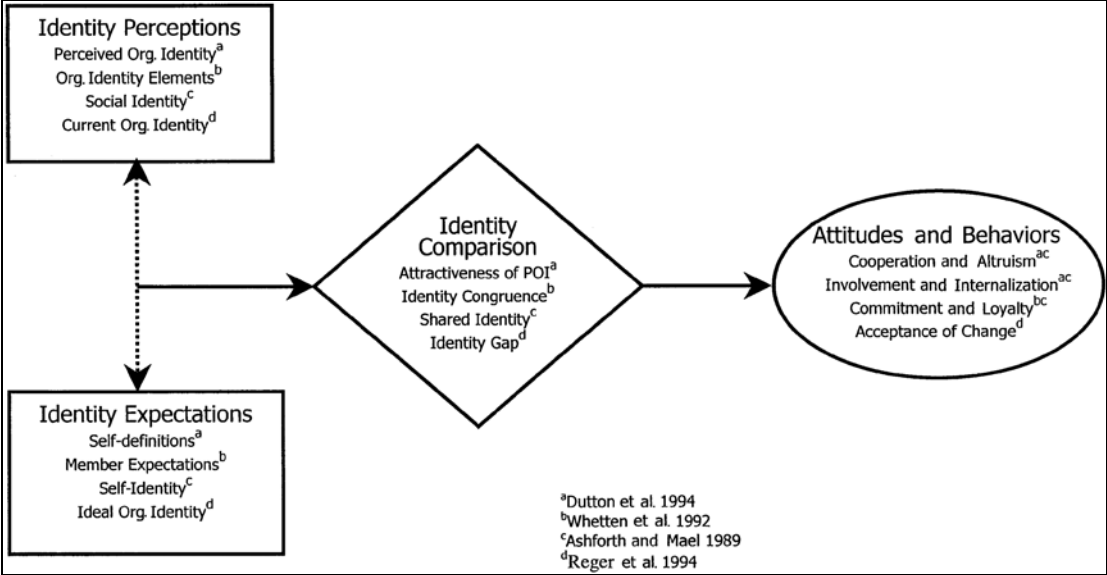
- Smith, G.D. and Jacobson, T.C. (2002). How farmers cultivate demand on Madison Avenue. *Stern Business*, Spring/Summer 2002. Available at: http://www.stern.nyu.edu/Sternbusiness /spring_summer_2002/cotton.html
Accessed on: January 20 2003.
- Stake, R.E. (1995). *The Art of Case Study Research*. California: Sage Publications.
- Tashakkori, A. and Teddlie, C. (1998). *Mixed Methodology: Combining Qualitative and Quantitative Approaches*. California: Sage Publications.
- Wallace, N. (1994). Otago Grower NZ Merino Chief. *New Zealand Farmer*, December 14, 1994: p3.
- Westgren, R.E., P.O. Foreman and D.A. Whetten (2004). Identification and Member Commitment to Agricultural Cooperatives. *Working Paper*, 13 January 2004.
- Westgren, R.E. and Zering, K. (1998). Case study research methods for firm and market research. *Agribusiness*, 14:5, 415-424.
- Williams, M. (1998). The rabbit calicivirus disease (RCD) saga: A biosecurity control fiasco. *Office of the Commissioner for the Environment*.

Figure 1: Micron distribution of the New Zealand wool clip 2001/02



Source: New Zealand Wool Board Statistical Handbook, 2001/02

Figure 2: A composite model of organizational identification



Source: Foreman and Whetten (2002)

Figure 3: The effect of a relative increase in perceived identity on commitment

