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**MANAGING HUMAN RESOURCES ON SIX DAIRY FARMS IN
MICHIGAN: A RESOURCE-BASED PERSPECTIVE**

By

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Plan B Research Paper

Submitted to

Michigan State University

in partial fulfillment of the requirements

for the degree of

MASTER OF SCIENCE

Department of Agricultural Economics

2004

ABSTRACT

MANAGING HUMAN RESOURCES ON SIX DAIRY FARMS IN MICHIGAN: A RESOURCE-BASED PERSPECTIVE

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How do dairy farms manage their human resources and how can the farms achieve competitive advantage through the human resource management (HRM) function? This inductive study of six dairy farms in Michigan explores those two questions using the resource-based theory (RBT) framework. Onsite interviews were conducted with 7 managers, 6 herdsman and 7 non-supervisory employees. An interpretive research paradigm was used for both within case and between case analyses. Drawing insights from the RBT which postulates that valuable, rare, inimitable, and non-substitutable resources confer competitive advantage, results from this study indicate that dairy farms have the potential to achieve competitive advantage through their HRM function. While there are similar HRM practices across cases like recruiting and selection, the integration of specific HRM practices with the organizational culture (values of farm managers, relationships based on kinship and friendship ties) and resource endowment leads to different organizational outcomes (costly mistakes by employees, voluntary turnover and termination) Finally, based on propositions developed from this study and RBT literature, a conceptual framework is proposed to guide future research on how to empirically test the relationship between the HRM function and performance of farm enterprises to ascertain whether human resources are a potential source of sustained competitive advantage.

Glory and honor to *El Shaddai*, the all sufficient God who brought me this far. To my parents, William and Mwanaidi Mugeru, for letting me pursue my dreams and to my friends who inspired me to keep reaching out for the “impossible.”

ACKNOWLEDGEMENT

This research was made possible by funding from the North Central Risk Management Educational Center at the University of Nebraska in Lincoln to the Diagnosis of Risk in Personnel Management Project (DRPMP) at Michigan State University. I express my gratitude to the funding agency and Dr. Vera Bitsch, the principle investigator of the DRPMP.

Many people share the credit for the completion of this work. I am deeply indebted to my advisor, Dr. Vera Bitsch, for her persistent guidance, stimulating suggestions and encouragement in all the time of research for and writing of this study. I would not have known the rigor of doing a qualitative case study research without her guidance. Dr. Bitsch also accompanied me in all field trips and conducted the interviews with managers.

I am also indebted to Dr. Christopher Peterson for his unfailing guidance and support at different stages of my graduate study at Michigan State University. Besides being a committee member of my thesis, Dr. Peterson inspired me to consider strategic management as a field of inquiry in the strategic management class. My deep appreciation is also to Dr. James Dulebohn, a professor in the Department of Labor and Industrial Relations and a committee member of my thesis, who provided valuable recommendations on how to improve the study.

I am grateful to the seven dairy farm owners and their 13 employees who willingly shared information on their human resources management practices. I cannot forget to mention my colleague, Mike Hogberg, who accompanied in all field trips and

conducted the interviews with the non-supervisory employees. I also appreciate Alyse Schrecongost and Wolfgang Pejuan, fellow graduate students, who volunteered to conduct the interviews with Spanish speaking employees and translated the interviews into English.

Last but not least, many thanks to my dear friends Gerald Nyambane and Hikuepi Katjuongua for providing inspiration at different stages of my stay at Michigan State University. Finally, I am deeply indebted to David Nduiki, a dear brother and director of Graduate Mobilization Program Africa, for his unfailing love with frequent emails from Nairobi.

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LIST OF ABBREVIATIONS

CA	Competitive Advantage
DMRPM	Diagnosis and Management of Risk in Personnel Management
FLC	Farm Labor Contractors
HR	Human Resources
HRM	Human Resource Management
KSAs	Knowledge, Skills and Abilities
MMPA	Michigan Milk Producers Association
NASS	National Agricultural Statistics Services
OSHA	Occupational Safety and Healthy Administration
RBT	Resource-based Theory
RP	Research Proposition
SCA	Sustained Competitive Advantage
SCC	Somatic Cells Count
SHRM	Strategic Human Resource Management
U.S.	United States
U.S.D.A	United States Department of Agriculture

CHAPTER ONE

INTRODUCTION

United States's farm sector is the single largest revenue producer and export earner in the nation (Krissman, 2002: 183), and hired farm labor is a major input in the farm production process (Runyan, 2000). According to the most recent U.S. Census of Agriculture, hired farm workers accounted for 31% of farm workforces in the 1990's while operators and their unpaid family members accounted for the remaining two-thirds (Runyan and Effand, 1998). Hired farm labor expenditure accounted for 11.2% of average farm production expenses in 2002.

Labor in agriculture is not a homogenous input in agriculture and its demand varies considerably across sectors. The demand for labor depends on enterprise mix and on specific growing conditions that determine when and how much labor is required (Findeis, 2002: 7). The demand for hired workers in some sectors is seasonal with high demand in specific months of the year (Martin, 2002: 1127). Demand for hired farm workers varies by type of crop and livestock, length of growing and harvesting season, extent of mechanization, and scale of production. The number of hired farm workers varies significantly by region because of differences in production focus. Livestock production, for example, dominates as the main source of employment for hired farm workers in the Midwest while in crop production fruit vegetables and horticultural crops dominate in the West (Zahniser and Treviño, 2001).

Hired farm workers in agriculture include farm managers, supervisors of farm workers and farm workers engaged in planting, cultivating, and harvesting crops or tendering livestock (Martin, 2002: 1127). There are three types of labor needs in

agriculture: seasonal workers, i.e., workers employed for specific seasons only, full-time year around workers, i.e., employees hired throughout the year, and casual labor, i.e., workers employed only on casual basis, either part-time, throughout the year, or seasonally (Findeis, 2002: 7-11). Seasonal labor is in high demand in labor intensive fruit and vegetable production in states such as California, Florida and Washington. Reliance on immigration labor has been a longtime trend for seasonal labor in the U.S. The number of full-time laborers needed in the U.S. is smaller compared to the seasonal laborers. Small and mid-size farms that largely depend on family labor and do not hire full-time year around workers mainly utilize casual labor.

The demographic characteristics of hired farm workers compared to other wage and salary workers during the 1990's is that they were predominantly male, younger, less educated, never married, and non-U.S. citizens (Runyan, 2000). In 2001, more than 80% of hired farm workers were male, nearly 46% Hispanic, and nearly 75% were less than 45 years old. Over half had not finished high school and more than a third were not U.S. citizens (Runyan, 2003). Hired farm workers earn low wages, receive few benefits and work for long hours compared to full-time workers in off-farm employment (Findeis et al., 2002: 1).

A recurring question in the U.S. agriculture has been whether there are enough workers available to meet the domestic labor requirements. It has been documented that more than 50% of farm workers are not legally eligible to hold U.S. jobs (Levine, 2001). Consequently, agricultural producers have been concerned that they could lose a considerable portion of their labor force and hence their livelihood if there are increased border enforcement efforts, work eligibility verification programs, and audits of

employees work authorization documents to determine their authenticity (Levine, 2001: 1). The hired farm worker market is also characterized by high labor turnover (Runyan, 2000).

1.1 Problem Statement and Research Questions

Fundamental changes affecting the labor market in U.S. agriculture are also reflected in the U.S. dairy industry. Important changes in the dairy industry include the consolidation of dairy farms where the number of farms continues to decline and remaining farms get larger due to competition (Tauer and Mishra, 2003: 2; Hadley, et al., 2002: 2053). According to the USDA Economic Research Service, although milk production in the U.S. increased by 11% from 1994 to 2002 and milk production per cow increased by 16% in the same period, the number of dairy farms decreased by 41% from 1993 to 2002 (USDA/NASS, 2002). Economies of size are becoming important in dairy production as farm sizes continue to increase. The number of farms with large herd sizes is on the increase through a decline of farms with small herd sizes by either exit or expansion (Hadley, et al., 2002: 2053). Historically, milk production has been labor intensive with year around twice per day feeding and milking. As competition in the dairy industry increases and dairy farms continue to consolidate, dairy farmers who expand their operations often make the transition from depending on family labor to increasingly depending on hired labor (Stahl et al., 1999: 51; Hadley, et al., 2002: 2054). Hired employees create a unique set of management challenges for dairy farm operators.

In a recent study to examine how expansion affects profitability, labor efficiency and managerial responsibilities, managers of dairy farms in Michigan and Wisconsin

considered human resource management as one of the most important skills to achieve successful expansion. Dairy farms that were able to increase milk production experienced a significant decrease in labor and management expense per hundredweight of milk produced through expansion (Hadley et al., 2002: 2053). In another study to examine responses in milk production and labor efficiency resulting from modernization processes of dairy operations in Wisconsin, Bewley et al. (2001: 717) found that milk production, labor efficiency, satisfaction with herd performance, profitability, and quality of life of farm owners increased as herd size increased. The study also found that dairy producers who expanded by building new facilities spent less time on farm work and more time managing employees. The producers reported that managing labor was their main challenge following expansion. Bewley et al. (2001: 725) also observed that satisfaction with employee morale and attitude and ability to get the necessary work done appeared to increase as herd size increase suggesting that economies of scale may be associated with employee management.

Recruitment of dairy farm employees is a major management problem due to the long hours of work, low pay, and poor working conditions on dairy farms (Fogleman et al., 1999: 2). Hadley et al. (2002: 2060) observed that availability of full-time employees is the most common pre-expansion human resource management challenge that dairy producers face. Human resource management skills have been identified as the most important managerial skills after expansion. The most common problems after expansion relate to evaluating employees, achieving managerial performance goals for employees, finding qualified full-time employees and training (p. 2063). Maloney (2002: 73) and Findeis (2002: 9) identified the Hispanic workforce as a viable option for full-time

employees for the dairy industry. Another study examined the reasons for dairy workers leaving jobs and low pay was identified as a major reason for employees leaving dairy employment (Billikopf, 1984). Reed (1994) did a study to determine whether any correlation exists between herd size, production and labor management on dairy farms in California. The author noted that the demand for dairy labor is changing as the industry grows. Labor is becoming more specialized, employees are expected to be more productive and competition for skilled labor is increasing.

Despite the importance of hired labor to the economic success of dairy farm enterprises, empirical studies that explore human resource management practices at the farm level and how dairy managers can effectively manage their labor to remain competitive in the industry are rare. The purpose of this study is to describe the human resource management practices of dairy farm operators in Michigan and how those practices can enable the farm enterprises to remain competitive in the industry. Given the limited availability of prior research on this topic in agriculture, the nature of the study is explorative and based on qualitative research methods. The primary research questions to guide this study are:

- (1) How do dairy farm operators manage their human resources?
- (2) How can the human resource management practices facilitate the dairy enterprises to remain competitive in the dairy industry through their employees?

The scope of the study relates to what labor management choices dairy farm operators face. Specifically, the study addresses the following issues: (i) mission and goals of dairy farms; (ii) tasks and duties employees perform; (iii) how dairy managers recruit employees; (iv) how managers select employees for specific positions; (v) how

they orient and train new employees; (vi) how they develop the competencies of their employees; (vii) compensation structure; (viii) voluntary turnover and reasons for terminating employees; (ix) costly mistakes by employees and how managers handle those mistakes; and (x) reasons why employees would accept alternative employment offers.

Human resource management affects both how people perform on the farm and what they get from it, which together translate into business results as well as employers and employees quality of life (Rosenberg et al., 1994: 1). The focus of this study is on various human resource activities. The study draws insights from the resource-based theory to suggest the implications of the dairy farms' HR activities in achieving competitive advantage.

1.2 Organization of the Thesis

This thesis is organized as follows: Chapter two provides the literature review. Competing theoretical paradigms in human resource management are briefly reviewed followed by a detailed discussion of the theoretical framework to guide this study. The chapter ends by reviewing empirical studies on agricultural labor. The research design for this study is discussed in chapter three followed by data analysis in chapter four. In chapter five, the implications of the research findings are discussed based on the theoretical framework developed in chapter two. Chapter six provides the methodological conclusions and conclusions regarding HRM practices on dairy farms. The chapter ends by discussing the recommendations for both practice and future research.

CHAPTER TWO

LITERATURE REVIEW

This chapter begins by defining human resource management (HRM). A brief overview of six theoretical models (behavioral theory, cybernetics theory, transaction cost theory, resource dependence theory, institutional theory, and resource-based theory) that have been advanced to understand the role of HRM in organizational functioning is provided. Since agricultural producers have control over their internal resources and little control over their external business environment, the resource-based theory (RBT) is singled out as the appropriate theoretical model to guide this study. The theory lays emphasis on internal firm resources as a source of competitive advantage. A detailed description of the basic tenets of the theory is provided before discussing the application of the theory in HRM. Different empirical studies that have applied the RBT to HRM are reviewed. The chapter ends by providing a review of farm level empirical studies on agricultural labor.

2.1 Definition and Concepts of Human Resource Management

The term HRM has varied meanings and connotations. Kleiman (2000: 2) defined HRM as "the organizational function that consist of practices that help the organization deal effectively with the various phases of the employment cycle." Fisher et al. (1999: 7) defined HRM as "all management decisions and practices that directly affect or influence the people, or human resources, who work for the organization." Armstrong (1999: 13) defined HRM as "the strategic approach to acquiring, developing, managing, motivating

and gaining the commitment of the organization's key resource - the people who work in it and for it.”

Storey (1992) reviewed literature on HRM and highlighted three connotations that the term carries. First, HRM is considered synonymous to personnel management (p. 24). Second, HRM is considered as the various techniques of personnel management (recruitment, selection, appraisal, reward, and development) used in an integrated way in the organization (p. 24). Third, the term is used to signal a more business oriented and business-integrated approach guiding the management of labor than personnel management and emphasis is placed on the concept of "resources" (p. 24). Storey (1992) suggests that this definition puts employees alongside other factors of production and suggests the potential of gaining competitive advantage through using people in the organization. Therefore, Storey argues that HRM is only present when the different human resource (HR) activities like selection, appraisal, and rewards are integrated with the wider business strategy (p. 25).

Truss and Gratton (1994: 665) contrast personnel management and HRM. First, personnel management focuses on the management and control of subordinates while HRM centers on the management team. Secondly, managers in HRM play a key role in coordinating resources toward achieving profit while this is not the case in personnel management. Finally, the management of organizational culture is an important aspect of HRM but plays no role in personnel management. Larsen and Brewster (2000: 2-3) and Storey (1992: 35) reviewed the employment relationship literature and provide a detailed contrast between personnel and human resource management.

Like Storey, Mabey et al. (1998: 1) notes that HRM is based on the notion that people management can be a key source of sustained competitive advantage. The authors present four reasons to support this contention: first, people need to be treated as assets rather than costs because human capability and commitment are what distinguishes successful organizations from the rest; second, managing human resource is a matter of strategic importance for a firm; third, managing human resources is an activity that has to be owned by all managers and too important to be left to personnel specialists only; and fourth, HR activities must be internally integrated with each other and externally integrated with the business strategy.

Wright and McMahan (1992: 298) define HRM as the integration of various HR practices that are used to manage people in organizations like selection, training, appraisal, and reward. The authors contrast HRM and strategic HRM by stating that strategic HRM is concerned with ensuring that HRM is fully integrated into strategic planning. Therefore, Wright and McMahan (1992: 298) define strategic HRM as "the pattern of planned human resource deployments and activities intended to enable an organization to achieve its goals." Cerdin and Som (2003: 4) and Truss and Gratton (1994: 663) also define strategic HRM as the linking of HRM practices to business strategy and performance. Wright and McMahan (1992: 298) highlight two important dimensions that distinguish HRM from strategic HRM. First, strategic HRM emphasizes the congruence among the various HRM practices, and secondly, it entails the linking of HRM practices with the strategic management of an organization.

From the above definitions, the central themes that define HRM are the integration of various HR activities within an organization and linking of those activities

with the organization's business strategy so that employees become a source of competitive advantage.

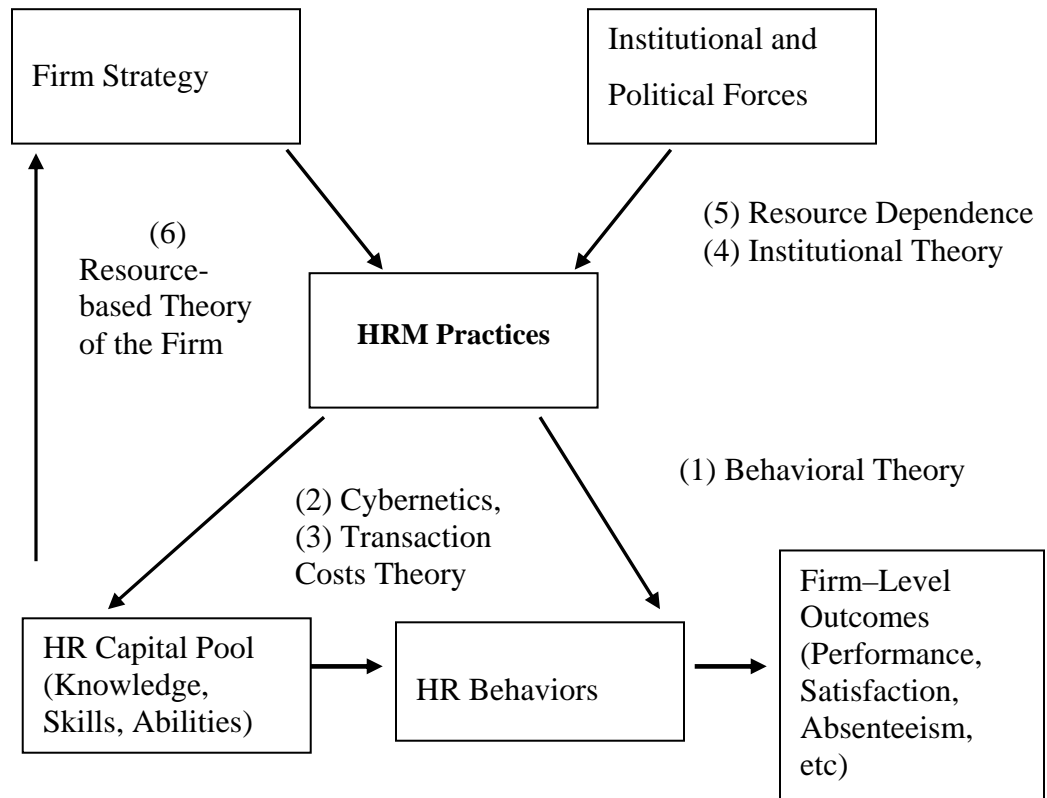
2.2 Theoretical Models in HRM

From the foregoing definitions of HRM, scholars have advanced different theoretical models relevant for predicting and understanding the effect of HRM on organizational functioning. The models are multidisciplinary in approach and mainly drawn from sociology, economics, management, and psychology. Wright and McMahan (1992: 296) argue that theory has value to both HRM practitioners and researchers. To the practitioner, the accuracy of the prediction of a theoretical model allows for better decision making under conditions of uncertainty. To the researcher, a well-developed theoretical model allows for the testing of the model and revision to increase its prediction accuracy.

Jackson and Schuler (1999) and Wright and McMahan (1992) examined six theoretical models that describe the determinants of HRM practices in organizations. Figure 2.1 depicts the relationship between those theoretical models and HRM practices as reviewed by Wright and McMahan (1992). The behavioral approach (1) is concerned with the relationship between firm strategy, HRM practices, and employees' behavior. The cybernetics theory (2) and the transactions cost theory (3) examine the relationship between firm strategy, HRM practices, and both the human resource capital pool and employees behaviors. The resource dependency theory (4) and the institutional theory (5) examine the effects of both political and institutional factors on HRM practices. The resource-based theory (6) focuses on understanding the relationship among firm strategy,

HRM practices, and the human resource capital pool (i.e. knowledge, skills and abilities of employees).

Figure 2.1 A Conceptual Model of Theoretical Framework for studying Strategic Human Resource Management (Wright and McMahan, 1992: 299)



2.2.1 The Behavioral Theory

The behavioral perspective focuses on employees' behavior that mediates between firm strategy and firm performance. It is based on the assumption that the purpose of various employment practices is to elicit and control employees' attitudes and behaviors that can lead to a number of outcomes that provide benefits to the firm. The perspective views HRM as the primary means of sending role information throughout the organization, supporting desired behaviors, and evaluating role performance. Role is

defined here as the recurring actions of an individual appropriately interrelated with the repetitive activities of others to yield a predictable outcome. Therefore, according to the perspective, effective HRM helps employees meet the expectations of their role partners within the organization (i.e., with supervisors, peers, and subordinates), at the organizational boundaries (i.e., with customers and clients), and beyond (i.e., with family and society) (Wright and McMahan, 1992: 303-305; Jackson and Schuler, 1999: 5-6).

2.2.2 The Cybernetics Theory

The cybernetics theory, or general system theory according to Jackson and Schuler, 1999, holds that organizations are input, throughput, and output systems involved in transactions with the surrounding environment (Wright and McMahan, 1992: 305-308; Jackson and Schuler, 1999: 5). The inputs in the system are human resource competencies (knowledge, skills, and abilities) that the firm must import from the external environment. The throughput is the behaviors of employees in the organization and the output is the performance of organization such as employee satisfaction and turnover (Wright and Snell, 1991: 209). The theory holds that the main responsibilities of HRM are competence management and behavior management. Wright and McMahan (1992: 307) state that “competence management deals with the things that an organization does to ensure that the employees have the skills required to execute a given organizational strategy.” On the other hand, “behavior management is concerned with ensuring that once individuals with the required skills are in the organization, they act in ways that support the organizational strategy.” The implication of the theory for HRM is that it requires aligning all of the various HRM practices towards some strategic end

rather than simply focusing on how one set of practice supports an organization's strategy (Mowday, 1985; Jackson and Schuler, 1999).

2.2.3 *Transaction Cost Theory*

Transaction costs are associated with the costs of negotiating, monitoring, evaluating and enforcing exchange. The costs are incurred to make exchange between parties efficient. The transaction cost theory seeks to identify the environmental factors that together with a set of related human factors explain why organizations seek to internalize transactions as opposed to transacting in the market place. Bounded rationality and opportunism are identified as two human factors that serve as obstacles to human exchange and combined with environmental factors result in both transaction and agency costs (Wright and McMahan, 1992: 308-310). According to Jones and Hill (1984: 160) bounded rationality implies that the "rationality of human behavior is limited to the actor's ability to process information" and opportunism implies "human beings are prone to behave opportunistically." The transaction cost approach to HRM implies that employees have strong incentives to shirk (reduce their performance) and free ride (rely on the efforts of others in the group) unless they are allowed to demonstrate their unique contributions to tasks and benefit from those contributions. Prospective employees may also act opportunistically by inflating their skills and abilities and, therefore, employers would incur bureaucratic costs to ensure that they obtain personnel with the required skills (Jones and Hill, 1984: 163). Thus, according to this perspective, the central problem to be solved by organizations is how to design governance structures that take

advantage of bounded rationality while safeguarding against opportunism (Jackson and Schuler, 1999: 7-8).

2.2.4 *Institutional Theory*

The institutional perspective assumes that individuals respond to normative pressures as they seek approval for their socially defined roles. Similarly, organizations are viewed as social entities that seek approval for their performance in socially constructed environments (Jackson and Schuler, 1999: 6). The theory posits that many structures, programs, and practices in organizations may serve some functional goals although they had not been designed for that purpose. Thus, not all HRM practices are the result of rational decision-making based on an organization's strategic goals. Rather, many HRM practices may result from external entity influences on the creation and implementation of such practices (Wright and McMahan, 1992). Certain practices can be imposed on the organization and influence HRM practices. For example, the government-mandated laws like Equal Employment Opportunity (EEO) and minimum wage legislation (Scott, 1987: 13). Organizations can also model their HRM practices based on practices of other organizations as a means of appearing legitimate or up to date. For example, the growth of quality circle practices in U.S firms (Lawler and Mohrman, 1987).

2.2.5 *Resource Dependence Theory*

The resource dependence model focuses predominantly on power relationships within and among organizations. The theory assumes that all organizations depend on the

flow of valuable resources into the organization in order to continue functioning. The ability to exercise control over valued resources provides organizations with a source of power. The power of the entity that controls the valued resources increases as the resources become scarce (Wright and McMahan, 1992: 311-313). Therefore, organizations try to acquire control over resources that minimize their dependence on other organizations (Ulrich and Barney, 1984). The power base of the HRM function is increased as organizations realize the importance and scarcity of human resources. The implication of this theory to HRM is that HRM practices are not just rationally determined and supportive of organizational strategies. Sometimes, political rather than technical or strategic considerations take precedence in HRM practices like selection, appraisal, and compensation (Wright and McMahan, 1992). Proponents of this theory include Pfeffer and Cohen (1984), Pfeffer and Davis (1987), Pfeffer and Langton (1988), and Ferris and Judge (1991).

2.2.6 Resource-based Theory

Literature in strategic management presents two theoretical perspectives in explaining sources of competitive advantage (CA): The Porter's five forces perspective and the Resources-Based Theory (RBT) perspective (Kim & Oh, 2003: 1). The first perspective views CA as a position of superior performance that a firm achieves through offering cost advantages or benefit advantages (Porter, 1980, 1981). This model attributes CA to the external environmental factors that a firm must respond to such as erecting barriers of entry to competitors, product differentiation, capital requirements, and buyer switching costs (Lado et al., 1992).

The second model of CA is the resource-based theory (RBT). The model is based on the assumption that the desired outcome of managerial effort within the firm is sustained competitive advantage (SCA) that allows the firm to earn above average returns (Fahy and Smithee, 1999: 1). This model view CA as emanating from the distinctive resources of a firm that gives it an edge over its rivals. An organization is viewed as a bundle of specialized resources that are deployed to create a privileged market position (Barney, 1986a; Ghemawat, 1986; Day and Wensley, 1988). Therefore, the RBT emphasizes strategic choices where managers of a firm have the important task of identifying, developing, and deploying key resources to maximize returns (Fahy and Smithee 1999: 1). The theory focuses on the link between strategy and the internal resources of a firm in achieving CA rather than the industry-environmental focus characteristic of the traditional strategic analysis paradigms, for example, the Porter's "five forces model" (Wright et al., 1994: 302).

In the words of Barney (1991: 102), "a firm is said to have CA when it is implementing a value creating strategy not simultaneously being implemented by any current or potential competitors." Fahy and Smithee (1999: 4) define CA as an advantage one firm has over a competitor or group of competitors in a given market, strategic group or industry. Sustained competitive advantage (SCA) occurs when any current or potential competitors of a firm are not implementing the value creating strategy and when those firms are unable to duplicate the benefits of the strategy (Barney, 1991: 102). Attainment of SCA is expected to lead to superior performance measured in convectional terms such as market share and profitability (Fahy and Smithee 1999: 4). The duration that a firm can sustain its CA is defined by the period in which current and potential competitors are

not able to duplicate the strategy that makes a firm's competitive advantage sustainable rather than by calendar period (Barney, 1991: 102).

The resource-based view of the firm holds that SCA can only occur in situations where a firm's resources are heterogeneous and immobile (Barney, 1991: 105; Peteraf, 1993). Those two assumptions differentiate between the resource-based view and the traditional strategic management model (Wright and McMahan, 1992). The traditional view of strategy assumes that firm resources are homogenous across firms in the industry and that resources are mobile because firms can purchase or create resources held by competing firms (Wright et al., 1994: 303).

The literature in strategic management presents different categorization of resources. Barney (1991: 101) groups firm resources into three categories: physical capital resources, human capital resources, and organizational capital resources. Grant (1991: 6) lists six categories of firm resources: financial, physical, human, technological, reputation, and organizational. Fahy and Smithee (1999: 7) note that a firm's resources comprise three distinct sub-groups namely tangible assets, intangible assets, and capabilities. Given the variety of labels used to describe a firm's resources set, Barney (1991: 101) defines a firm's resources to include all assets, capabilities, organizational processes, firm attributes, information, and knowledge that it controls and that enable it to conceive and implement strategies that improve its efficiency and effectiveness.

From the foregoing definition, heterogeneity refers to how different resources are distributed across firms. Oliver (1997: 701) defines firm heterogeneity as "relatively durable differences in strategy and structure across firms in the same industry that tend to produce economic rents" and rents as "above normal rates of return." Peteraf, (1993:

180) notes that heterogeneity implies that the productive factors used in firms have intrinsically differential levels of efficiency whereby some are superior to others. Therefore, firms endowed with superior resources are economical in production and can effectively compete in the market compared to those without superior resources.

Resource immobility refers to the inability of competing firms to obtain resources from other firms (Wright and McMahan, 1992: 301). The resources of a firm can be immobile for several reasons. First, when the resources property rights are not well defined (Dierickx and Cool, 1989: 1505); second, when the resources have no use outside the firm (Williamson, 1975); third, when the resources are co-specialized, that is they are used in conjunction with another or have higher economic value when employed together (Teece, 1986); and forth when the resources have high transaction costs (Williamson, 1975). Since the immobile resources are non-tradable or are of less value to other users, they remain bound to the firm and available for use over the long run. Hence, the resources are a source of competitive advantage to the firm (Peteraf, 1993: 184).

The assumptions of heterogeneity and immobility of resources are necessary but not sufficient conditions for a firm's resources to hold potential for SCA. A resource must have four other attributes to provide SCA: 1) the resources must add value to the firm; 2) the resources must be rare among current or potential competitors; 3), the resources must be imperfectly imitable; and 4), the resources should not be strategically substitutable with another resource by competing firms (Barney, 1991: 105; Wright and McMahan, 1992: 301).

A firm's resources are valuable when they enable its management to conceive or implement strategies that improve its efficiency and effectiveness. Valuable resources

enable a firm to capitalize on its strengths to exploit the opportunities in the external environment while neutralizing existing threats (Barney, 1991: 106; 1999). Fahy and Smithee (1999: 5) argue that although a resource may meet all the other three conditions, it is not considered a potential source of SCA if it is not valuable or cannot enable a firm to create value.

A resource is rare when it is not possessed by a large number of firms. Barney (1992: 106) urges that if a large number of firms possess a particular valuable resource, the resource becomes a source of competitive parity and not CA or SCA. This stems from the argument that a firm enjoys a CA when it is implementing a value creating strategy not being implemented by a large number of firms. Otherwise, if other firms possess the resource, each of them will exploit the resource by implementing a common strategy that lead to competitive parity.

Resources that are valuable and rare leads to the resources being imperfectly imitable, i.e., not easy to obtain or copy (Lippman and Rumelt, 1982; Barney, 1986a; 1986b). A firm may find it difficult to obtain a valuable and rare resource because of the cost disadvantage it faces compared to firms that possess that resource (Barney, 1992). Dierickx and Cool (1989) describe three conditions under which resources can be imperfectly imitable. First, when the ability of the firm to obtain resources is dependent on unique historical conditions; second, when the link between the resources and the firm's competitive advantage is causally ambiguous; and third, when the resource generating a firm's competitive advantage is socially complex.

The first condition states that the performance of a firm not only depends on the industry structure within which a firm finds itself at a particular point in time but also on

the path a firm followed through history to arrive where it is, i.e. path dependent (Barney, 1991: 108). As firms evolve, they employ human resources with different skills and abilities and acquire other resources that are unique to them, reflecting their particular path through history. Those resources reflect the unique personalities, experiences, and relationships that exist in a single firm. Therefore, a firm may obtain valuable and rare resources because of its unique path through history and use the resources in implementing value-creating strategies that cannot be imitated by other firms (Barney, 1991; 1992). Besanko et al. (1996: 595) argues that even small path dependencies have important CA consequences. For example, a firm that developed significant commitment to a particular way of doing business may find it hard to adapt to minor changes in technology.

Causal ambiguity is defined as the situation where the link between the resources controlled by a firm and its SCA is not understood or only understood imperfectly (Lippman and Rumelt, 1982; Reed and DeFillippi, 1990; Barney, 1991). In this case, the relationship between a resource and other firm-specific resources and capabilities creates uncertainty regarding the causes of efficiency differences among firms. This prevents would-be imitators from knowing exactly what to imitate or how to imitate it (Lado et al., 1992; Peteraf, 1993: 187). Casual ambiguity arises out of an informational problem where a competitor is unable to identify what are the reasons behind a given firm's success (Fahy and Smithee 1999: 5).

Social complexity is a complex social situation arising from human interaction and constitutes a competitive advantage. According to Wright et al. (1994: 309), the term refers to the fact that many social phenomena are complex to make it possible to manage

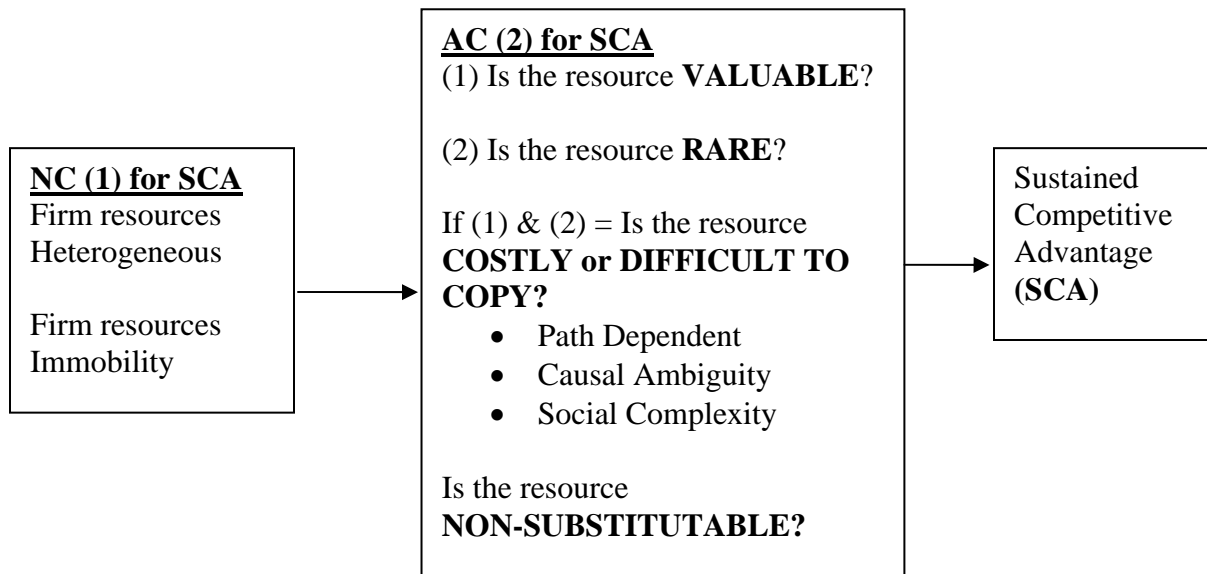
and influence them systematically. Examples of social complexity in a firm's resources include (1) the interpersonal relationship among managers (Hambrick, 1987), (2) organizational culture (Barney, 1986b), (3) reputation among suppliers (Porter, 1980), and (4) a firm's relationship with customers (Klein and Leffler, 1981).

The final requirement for a resource to be a source of SCA, non-substitutability, demands that a firm's resource must not have other strategically equivalent resources that competitors can substitute for it. Therefore, other competing firms cannot implement the same strategy because of the absence of another strategically equivalent resource to generate the SCA (Barney, 1991: 111).

Figure 2.2 presents a conceptual framework for understanding the assumptions and conditions relevant for attaining SCA as postulated by the RBT. The theory is based on two main assumptions, resource heterogeneity and resource immobility. Those two assumptions qualify a resource to be a source of CA but not SCA (Wright and McMahan, 1992: 301). Once those two conditions are satisfied, the assumptions of value, rareness, inimitability, and non-substitutability generate the additional conditions for a resource to be a source of SCA.

Peteraf (1993: 186) notes that the RBT is important because it explains long-lived differences in firm profitability that cannot be attributed to differences in industry conditions. Bowman (2003: 1) points out that the RBT recognizes that resources can be built or bought and deliberate creation of resources would be part of the managerial activity. Paauwe and Boselie (2002) observe that RBT is the dominant theory being used in the empirical literature on the relationship between HRM and performance.

Figure 2.2 Conceptual Models for Sustained Competitive Advantage as postulated by the Recourse-based Theory



NC = Necessary Conditions

AC= Additional Conditions

SCA = Sustained Competitive Advantage

NC (1) & NC (2) = SCA

2.2.6.1 Applications of the RBT to HRM

Drawing from the RBT of the firm, literature in strategic HRM is increasingly concerned with whether HR can be a source of CA (Reed and DeFillippi, 1990; Wright and McMahan, 1992; Wright et al., 1994; Kamoche, 1998). Ulrich (1991), Wright et al. (1994), and Barney and Wright (1998) used the BRT to describe how HRM practices can be used to develop strategies that leads to CA.

Wright and McMahan (1992) and Wright et al. (1994) describe two conditions in the labor market that make human resources a source of CA: 1) the heterogeneous demand for labor, and 2) the heterogeneous supply of labor. The authors argue that human resources add value to the firm because of the existence of heterogeneous demand

for labor and supply of labor. Heterogeneous demand for labor exists because firms have jobs that require different skills. For example, the skills needed to work on a dairy farm are different from those required to work in a greenhouse operation. Heterogeneous supply of labor exists because individuals differ in their skills and level of skills. Those two conditions ensure that human resources with high competencies provide value to the firm. Wright et al. (1994: 306) argues that there would be no variance in an individual's contribution to the firm if both the demand for and supply of labor was homogeneous, i.e., all employees and potential employees have equal productive capacity. In this case, there would be no need to create value through investment in employee training and development. However, Barney and Wright (1998: 32) note that the main goal of HR executives is to create value through the HR function. The authors argue that a firm can create value by either decreasing product and services costs or differentiating the product and services in a way that allows the firm to charge a premium price. Employees using a less expensive insurance plan to enable an organization hold down its cost of health insurance are cited as an example of how human resources can create value for the firm. Richard (2000: 165) notes that cultural diversity in human capital can serve as a source of competitive advantage because it creates value that is both difficult to imitate and rare.

Wright et al. (1994: 308) used the difference in cognitive abilities of individuals to demonstrate that human resources are rare. The authors argued that jobs require individuals to have different skills that allow for variance in individuals contributions in organizations. Hence, since these skills are normally distributed, human resources with high ability levels are rare. Therefore, firms with high average cognitive ability relative to their competitors possess more valuable human capital resources. The ultimate goal of all

selection programs is to ensure that the organization is hiring only individuals with highest ability. Barney and Wright (1998: 34) use an example from a firm in a highly competitive retailing industry to demonstrate how a firm can develop and exploit rare characteristics of its human resources to gain competitive advantage. The retailing industry is characterized as having low skill requirements and high turnover for sales clerks. Assuming the labor pool for sales clerk is homogenous, a firm can invest in attracting and retaining young college-educated sales clerks who desire a career in retailing. The firm can provide highly incentive based compensation system that allows the sales persons to earn twice the industry average in pay. In this example, the firm takes labor that is considered homogenous and exploits its rare characteristic - those individuals who desire a career in retailing - to gain competitive advantage.

Wright et al. (1994: 309) demonstrate how human resources meet the third criteria of a resource being inimitable by using the concepts of unique historical conditions, causal ambiguity, and social complexity. Human resources are inimitable when the firm has a unique history over the course of which particular cultures and norms develop. The culture and norms may meld human resources together to create a synergistic work culture where individuals cooperate in line with organizational goals. Such an organizational culture rooted in its history may not be imitable. Casual ambiguity leading to efficient production in one firm may be due to teamwork whereby it is impossible for a rival firm to create a team with similar attributes. Social complexity may arise out of transaction specific relationships whereby there is knowledge and trust between employees and other business stakeholders that are hard to analyze and imitate. Barney and Wright (1998: 34) also point that social complex phenomena such as an

organization's unique history or culture cannot be easily imitated by competitors. The authors cite the culture of trust in Southwest Airlines where the management provides employees with both the desire and discretion to do whatever it takes to meet the customers' needs as an example of a socially complex phenomenon. Richard (2000: 166) argues that human resources cannot be easily imitated because they are protected by knowledge barriers and are socially complex because they involve a mix of talents that are elusive and hard to understand.

The fourth condition for a resource to be a source of sustained competitive advantage is not to have substitutes. Wright et al. (1994: 312) argues that human resources are one of the few firm's resources that have the potential of not becoming obsolete. Therefore, if one firm develops a technology that provides greater productivity than what is generated by a rival firm that relies on human ability, once the latter firm is able to purchase the new technology its human resources would again become a source of competitive advantage. This is because technology can be purchased in the market place or become obsolete while human resources with high cognitive ability and highly committed to the firm are valuable, rare and cannot be imitated. Hence, human resources are non-substitutable.

2.2.6.2 *RBT and Empirical Research on Strategic HRM*

Several scholars have used the RBT to conduct empirical research in strategic HRM. King and Zeithaml (2001) used the RBT to develop and test hypotheses that relate manager's perceptions of causal ambiguity to their firm's performance. The hypotheses examined the relationship between firm performance and causal ambiguity regarding the

link between competencies and CA, and the causal ambiguous characteristics of competencies. On-site interviews were held with 224 executives in 17 organizations in the textile and hospitality industries to identify different competencies. Surveys were also sent to all the executives and the response rates were 92% for the textile industry and 88% for the hospitality industry. Relationships between variables were tested using Pearson correlations and the study results revealed that causally ambiguous characteristics regarding competencies were associated with higher firm performance.

Richard (2000) used the RBT to examine the relationships among cultural (racial), diversity, business strategy, and firm performance in the banking industry. Mailed surveys were used to collect data from 574 banks and the response rate was 16% of the sampling frame. The study results indicated that racial diversity interacted with business strategy in determining firm performance measured by productivity, return on equity, and market performance. The author concluded that cultural diversity does add value to a firm, and within the proper context, contributes to its competitive advantage. Diversity ensures a variety of perspectives that is rare because few firms have achieved significant levels of diversity and that socially complex dynamics inherent in diversity leads to its inimitability.

Wright et al. (1999) examined the impact of HR practices (selection, training, compensation, and appraisal) on the financial performance (profit margin, annual profit growth, and annual sales growth) of U.S. petro-chemical refineries. Surveys were sent to 190 HR managers of refineries and the overall response rate was 20%. Regression analysis was used to analyze the data. Survey results indicate that appraisal and training were significantly related to workforce motivation. Selection, compensation, and

appraisal interacted with participation in determining the refinery financial performance. Only under highly participative systems was each of those practices strongly positively related to financial performance. The authors concluded that human resources could be used as levers through which firms develop a skilled and motivated workforce that can be a source of competitive advantage.

Koch and McGrath (1996), drawing from the RBT, developed a conceptual framework which suggested that investment in HR planning, recruitment, selection, and employee development have a positive effect on a firm's performance in the form of labor productivity. This hypothesis was tested on a sample of 319 business units. The research findings show that the way in which an organization manages its human resources has a significant relationship with productivity of its employees. The authors conclude that competitiveness of a firm is related, at least in part, to its investment in human assets. Firms that have effective routines for acquiring human assets develop a stock of talent that cannot be imitated, and that those HR practices are related to labor productivity, especially in capital intensive organizations.

Wright et al. (1995) examined the extent to which congruence between an organization's strategy and its human resources affects performance. The authors assumed that different strategies require different skills and, therefore, organizations seeking to pursue different strategies will seek out different skills from employees. The relationship between skills and performance was assumed to differ across strategies too. A survey was used to collect data from coaches of 300 National Collegiate Athletic Association (NCAA) men's basketball teams. The study focused on how the fit between the skills of team members and the strategy they employed impacts performance. The

study found that teams whose coaches used a different strategy from their preferred strategy performed lower than teams where the coach was able to use his preferred strategy. The results indicate that strategies may determine the types of human resources sought and that the type of human skills available might also influence the strategy chosen.

2.2.6.3 *Criticisms to the Application of the RBT to HRM*

Although the RBT has been applied to in HRM, the theory has been criticized for extolling the benefits of human resources as a source of CA without taking into consideration how the related management dilemmas may prevent firms from generating the advantage. Coff (1997) posits that firms cannot achieve a sustainable competitive advantage from human resources unless they are able to cope with the associated management dilemmas such as employees' threat of voluntary turnover, demand for higher or more equitable wages, rejection of authority in the firm or becoming unmotivated, and the need to be satisfied with supervision, coworkers, or opportunities for advancement.

Lado and Wilson (1994: 713-716) share the view that human resources systems can also contribute to organizational vulnerability and competitive disadvantage in four different ways. First, the HR managers and professionals may have a narrow focus on HR issues to contribute effectively to the formulation and implementation of the organization's strategic vision and objectives. Second, a firm's recruitment and selection system may result in hiring individuals who do not possess the requisite firm specific knowledge, skills, and abilities or selection of individuals whose values and beliefs are

incongruent with the organization's values and beliefs. Third, employees may engage in routine behaviors that perpetuate the status quo such as the tendency to provide justification for poor performance rather than improving on their performance. Finally, the HR system characteristics such as rules, policies and procedures can also result in employees becoming passive, apathetic and powerless after experiencing a series of frustration.

2.3 Empirical Studies on HRM in Agriculture

Few empirical studies on hired farm workers and human resources management (HRM) in agriculture existed before the Immigration Reform and Control Act (IRCA) was passed in 1986 (Rosenberg et al., 1994:1-2). Most of the studies published before 1986 on agricultural labor focused on the supply of seasonal labor, labor productivity, or the agricultural versus non-agricultural wage differences (Howard et al., 1991: 12). Howard and McEwan (1989) reviewed literature related to HRM on farm operations until 1989. The authors observed that there were few studies published on the subject because HRM was traditionally not an area of interest for agricultural economists.

Empirical studies on HRM in agriculture have focused on various issues that include: (1) compensation, (2) employee retention, (3) agricultural producers' labor needs after expansion, (4) farm workers preference for employment through farm labor contracts (FLC), (4) perception of farm workers about their jobs, (6) labor supply, and (7) other issues in HRM. Appendix 1 provides a chronological summary of 26 empirical studies reviewed. The table highlights the type and number of farm studied, research methods used, research focus, and key findings.

On farm workers compensation, Fogleman et al. (2001) surveyed 189 farms in Kansas State to provide compensation information for 446 farm employees. The employees were categorized into five competency levels (no advanced skills, specialized, highly specialized, exceptionally skilled and most skilled) and three employment status (fulltime, part-time, or seasonal). The study results indicate that both cash wages and total compensation tend to increase as the competency level of employees increases. Fogleman (1999) surveyed 709 fulltime, non-owner employees, on 92 dairy farms in Northwest to explore the relationship between compensation and employee job satisfaction. Data was analyzed using an econometrics model. Fogleman found that besides compensation, dairy farm workers considered task identity and autonomy to be important factors to job satisfaction. Billikopf (1996) used surveys to examine growers and crew workers perceptions about piece rate pay in 160 fruit, 157 vineyard, and 87 vegetable farm growers in California. The study found that while farm workers preferred piece rate pay because they could get their work done quicker and earn more money, they also preferred hourly pay in slower paced working conditions. Billikopf (1995) interviewed 510 seasonal workers and 15 crews on dairy farms in California to examine pay conditions that influenced workers to leave their jobs early. He found that low wages was the most likely reason that would lead workers to an early exit. Increased wage earnings also motivated low-income workers to work longer hours. Billikopf and Norton (1992) used surveys on 179 grape growers in California to investigate the effect of pay method on the speed and quality of work of vineyard pruners. Although employees paid at piece rate had faster pruning speed, pay method was not found to affect the work quality of vineyard pruners. Howard et al. (1991) explored

the compensation package on swine farms in Ontario. Forty-two employers and 121 employees were interviewed using a structured questionnaire. Howard found that employees in agriculture made less money compared to their counterparts in non-agricultural industries and that female employees earned less pay than their male counterparts although both genders had similar educational characteristics. Anderson (1998) used a mailed survey to determine the working conditions in 219 dairy operations in Michigan. Large operations were found to provide better benefits than small operations and no correlation was found between wage rates and herd size.

Two studies have focused on employee retention. Billikopf (1984) interviewed about 100 workers on dairy farms in California to determine their reasons for voluntary turnover and estimate the turnover rate. The study found that main causes for voluntary turnover among employees were compensation, employee personal and family problems, economic problems of the operations, and the personal relationship between an employee and coworkers or managers. Thilmany (2001) used data from different surveys on farm employers in Washington to explore whether employer specific factors influence workers turnover and the ability of employers to attract return workers. She found that employer's managerial decisions like wage levels and production diversification strategies have significant effect on worker retention.

Two studies have focused on agricultural producers' labor needs after expansion. Bewley et al. (2001) examined the responses in milk production and labor efficiency resulting from modernization of 302 dairy operations in Wisconsin. Managing labor was identified as one of the main challenge facing producers following expansion and problems with labor management were found to decrease with increase in herd size.

Hadley et al. (2002) surveyed and interviewed 20 dairy operators in Michigan and Wisconsin to examine how expansion affected their labor efficiency and managerial responsibilities. Human resource management was identified as one of the most important skills necessarily to achieve successful expansion.

On farm workers' preference for employment, Billikopf (1997) interviewed 211 crew workers at 19 job sites in California to explore whether workers preferred direct employment with growers or through farm labor contracts (FLC) intermediaries. Billikopf found that crew leaders preferred working directly for growers than for FLCs because they perceive growers to provide superior compensation than FLCs. Vaupel (1992) collected data from 70 growers and shippers in California using mailed surveys to gather information on growers' experience with farm labor contracts (FLC) and custom harvests. The study indicates that agricultural producers used FLC to reduce operational costs and minimize risks related to labor management. Thilmany and Blank (1996) used a probit model to estimate differences in increased FLC usage across employers in California. The data was collected using a questionnaire from 569 growers. The study indicates that use of FLCs was likely to continue in California because growers use FLCs as a form of labor risk management.

Two studies have focused on farm workers' perceptions about their work. Billikopf (1999) surveyed 265 seasonal and year around farm workers in California to determine their perception about work. He found that farm workers were generally contented with their jobs and were not necessarily looking for jobs outside of agriculture. In another study, Billikopf (2001a) interviewed 42 farm supervisors in California to explore their perception about their jobs and how they became supervisors. Seventy-three

percent of the supervisors were farm employees before being offered the supervisory job while 23% worked their way up. Interpersonal relationship with coworkers was the supervisors' most challenging and rewarding experience.

On labor supply, Emerson (1989) surveyed farm workers in Florida to examine the influence of economic incentives on participation in migration among seasonal workers. He found that expected wage differentials would induce seasonal workers to migrate. Perloff et al. (1998) used the National Agricultural Survey (NAWS) data to estimate the impact of legal status and other workers attributes on migration decisions. He found that although expected earning differentials would induce migration, there were substantial costs of migration and hence employers who want to attract labor must offer earning premiums. In another study, Perloff and Tran (2002) used the NAWS data of 1987 to 1991 to test the hypothesis that the workers who received amnesty following the ICRA of 1986 would more likely leave agriculture than would undocumented workers. The hypothesis that granting people amnesty induces the farm workers to leave agriculture was rejected.

Other studies have focused on various issues related to human resource management on the farm. Bitsch et al. (2003) investigated the risk associated with managing farm labor in the green and dairy industry in Michigan and found that labor risks are a major concern for agricultural producers. Michael and Leschinsky (2003) investigated the training needs of 123 hardwood lumber producers in Pennsylvania. He found that producers perceived training in leadership as more important than wood science or process control. Billikopf (2001b) explored causes for conflicts for both farm workers and supervisors in multiple types of crops and farm operations in California. He

found that farm workers have more conflicts with supervisors than coworkers. Maloney (2002) used survey sheets to assess how 20 dairy farm employers in New York feel about their experience managing Hispanic employees. Nineteen employers were interviewed through the telephone and one employer filled out the survey form and returned it. Employers reported excellent work performance among Hispanic employees despite language and cultural differences. Hispanic employees were perceived as a viable workforce option for the dairy industry.

In summary, the literature reviewed indicates considerable effort devoted to empirical HRM research in agriculture. Several observations can be made from the reviewed literature. First, most studies concentrated on distinct personnel management functions like training (Michael and Leschinsky, 2003), compensation (Fogleman, 1999; Billikopf, 1995; 1996; Billikopf and Norton, 1992; Howard et al., 1991) or employee retention (Billikopf, 1984, Thilmany, 2001). While those studies provide useful information to understand the single HR activities at the farm level, the studies do not provide integrated information on various HR activities that is one of the central themes that defines HRM. The result of this is limited understanding of how the various HR activities at the farm level impact the performance of the farm enterprises. Second, the studies have not built on and refined issues that were raised in previous research. Third, despite the existence of literature on HRM, the empirical studies have not been guided by HRM theory. Fourth, except for several studies that have focused on the dairy industry, the empirical studies have not focused on a single industry in agriculture so that there is an emerging consistent body of HRM knowledge on a particular industry. Finally, surveys were the dominant research methods used to collect data in those empirical

studies. Four studies used mailed surveys to collect data (Michael and Leschinsky, 2003; Anderson, 1998; Reed, 1994 and Vaupel, 1992) and one study used a telephone survey (Maloney, 2002). Two studies used both surveys and face-to-face open-ended interviews to collect data (Hadley et al., 2002; Reed, 1994). Six studies used structured field interviews as the primary method of data collection (Billikopf, 2001a; 2001b; 1999; 1997; 1992; 1984). Only one study, Bitsch et al. (2003), used focus group discussions to identify risks in managing personnel in agriculture.

From the foregoing observations, there is need to enrich empirical HRM studies in agriculture to generate useful information on how the farm enterprises can remain competitive. This calls for empirical HRM studies to be focused on the HRM function rather than the distinct personnel management activities. There is also need for empirical studies to be guided by HRM theories to enable prediction and understanding of the role of the HRM function at the farm level.

CHAPTER THREE

MATERIAL AND METHODS

3.1 Qualitative and Quantitative Research

Research is defined as “a systematic, critical, and self critical enquiry that aims to contribute to the advancement of knowledge and wisdom” (Bassey, 1999: 38). As the definition implies, for research to be both a critical and a self-critical inquiry, the philosophical orientation of the researcher is fundamental when choosing the research method to use. At the onset of a research project, the choice of the research method to use begins with examination of the researcher’s orientation to the basic tenets about the nature of reality, the purpose of doing research, and the type of knowledge to produce (Merriam, 1998: 3). Different scholars have contrasted three main philosophical orientations to research: positivism paradigm, interpretive paradigm, and critical paradigm (Kim 2003; Khazanchi and Munkvold 2002; Gephart 1999; Merriam 1998: 4). A paradigm is defined as the “basic belief system or world view that guides the investigation” (Guba and Lincoln 1994: 105). The positivistic paradigm is associated with quantitative research while the interpretive paradigm is associated with qualitative research. Ghauri and Gronhaug (2002: 172) argue that the choice of whether to use qualitative or quantitative research methods depends on the type of research questions to ask, the control the researcher has on behavioral events, the focus of study on a current or historical phenomenon, the type of information needed, and how the information is to be obtained.

3.1.1 Positivistic, Interpretive, and Critical Research Paradigms

Kim (2003) reviewed literature on organizational learning and provides an analysis of the three research paradigms. Positivism is based on the assumptions that there are universal laws that govern social events and uncovering these laws enables researchers to describe, predict, and control social phenomena. Interpretive research seeks to understand values, beliefs, and meanings of social phenomena, thereby obtaining a deep and sympathetic understanding of human cultural activities and experiences. Critical research seeks to explain social inequalities and injustice in society that individuals can take actions to change (p. 10). The three paradigms take distinctively different epistemological positions regarding theoretical foundations, assumptions, and purposes for research. Table 3.1 provides a comparison of the key features of the paradigms where the key assumptions of each paradigm are briefly outlined.

Bassey (1999: 42-43) reviewed the difference between the positivistic and interpretive research paradigms. The positivistic paradigm holds that a stable and observable reality exists, whether it is observed or not, and irrespective of who observes it. People observing with their senses can discover this reality. The positivist holds that the world is rational and, given sufficient time and effort, can be understood through research. Positivist researchers do not expect that they are significant variables in their research. Instead, they expect that other researchers handling similar data can come to the same conclusions that they find. The researchers assume things and events are real irrespective of the observers and therefore can be counted and subjected to statistical analysis. The purpose of research to the positivist is to advance knowledge by understanding and describing the phenomena of the world and sharing the findings with

others. The researcher is able to understand and explain how particular events occur, how they are linked to theoretical structures, and provide predictions about the future.

Table 3.1 Management Research Paradigms (Gephart 1999, Khazanchi and Munkvold 2002)

	Positivism	Interpretivism	Critical theory
Assumptions	Objective world which science can 'mirror' with privileged knowledge	Intersubjective world which science can represent with concepts of actors; social construction of reality	Material world of structured contradictions and /or exploitation which can be objectively known only by removing tacit ideological biases
Key focus	Search for contextual and organizational variables which cause organizational actions	Search for patterns of meaning	Search for disguised contradictions hidden by ideology; open space for previously silenced voices
Key theories in paradigm	Contingency theory; systems theory; population ecology; Transaction costs economics of organizing	Symbolic interaction; Ethnomethodology; Phenomenology; Hermeneutics	Marxism; critical theory; 'radical' perspectives.
Goal of paradigm	Uncover truth and facts as quantitatively specified relations among variables	Describe meanings, understand members' definition of situations, examine how objective realities are produced	Uncover hidden interests, expose contradictions, enable more informed consciousness, displace ideology with scientific insights; change
Nature of knowledge	Verified hypotheses involving valid, reliable and precisely measured variables	Abstract description of meanings and members definition of situations produced in natural contexts	Structural or historical insights revealing contradictions

	Positivism	Interpretivism	Critical theory
Criteria for assessing research	Rigor; internal and external validity, reliability	Trustworthiness, Authenticity	Theoretical consistency, historical insights, transcendent interpretations
Unit of analysis	Variables	Meanings; symbolic act	Contradictions, incidents of exploitation
Research methods	Experiments; questionnaires; secondary data analysis;	Ethnography, participant observation, interviews, conversational analysis, grounded theory development	Field research, historical analysis, dialectical analysis
Types of analysis	Regression; Likert scaling; structural equation modeling; grounded theory testing	Case studies: Conversational and textual analysis; Expansion analysis	Textual analysis
Role of the researcher	Objective, impartial observer, passive, value-neutral	Interactive; the researcher interacts with the human subjects of the enquiry, changing the perceptions of both parties	Transformative; initiating change in social relations and practices, helping to eliminate the bases of alienation and domination

For the interpretive paradigm researcher, reality is a construct of the human mind where people perceive and construe the world in similar ways but not necessarily the same. Therefore, people can have different understandings of what is real depending on their perceptions of the world. The interpretive researcher considers that the rationality of one observer may be different from the rationality of another observer and that people have different views of what is real. Interpretive researchers reject the positivist view that the social world can be understood in terms of general statements about human actions. To the interpretive researcher, the descriptions of human actions are based on social

meanings where people living together have shared meanings that change through social intercourse. Interpretive researchers recognize themselves as potential variables in the inquiry. The data collected are usually verbal, i.e., field notes, diaries, transcripts, and reports of conversations. Data collected can sometimes be analyzed numerically but it is usually not open to quantitative statistical analysis. The purpose of research is to advance knowledge by describing and interpreting phenomena of the world in an attempt to get shared meaning with others. The interpretation is a search for deeper perspectives on a particular event and for theoretical insights. It may offer possibilities, not certainties, as to the outcome of future events (p. 43).

The critical paradigm was developed by the Frankfurt School in Germany and is based on the German tradition of philosophical and political thoughts stemming from Marx, Kant, Hegel, and Max Weber (Gephart, 1999; Wardlow, 1988). A basic assumption of the paradigm is that the material world we encounter is both real and is produced by and through capitalistic modes of production. Capitalism contains a basic inequality that operates as both a social value and a social structure. The capitalist exploits workers by paying a wage that is less than the economic value that the workers produce (Gephart, 1999). Critical theorists focus on understanding society and its institutions through which individuals can and will decide to act upon injustices in order to change them. Critical theory seeks to understand the values and actions of social affairs and to change the world to minimize suffering and maximize human development and responsibility (Wardlow, 1988: 4). Critical theorists maintain that positivistic methods cannot capture the critical role in knowledge of values that are needed to

improve human conditions and that the positivistic tradition neglects the realities of power, ideological beliefs, and social inequalities in society (Kim, 2003: 13).

Gephart (1999) provides a contrast between the interpretive and critical paradigms. The purpose of using the interpretive paradigm is to describe phenomena from the perspective that people assign to them while the critical paradigm is used to provide social critique. The critical paradigm seeks to uncover hidden interests and expose contradictions in society. While the interpretive paradigm focuses on definitions of situations in their natural context, the critical paradigm focuses on historical insights that reveal contradictions. The research methods used in the interpretive paradigm include ethnography, participant observations, interviews, conversational analysis, and grounded theory. On the other hand, research methods in the critical paradigm involve field research, historical analysis, and dialectical analysis. Khazanchi and Munkvold (2002) contrast the role of the researcher in the two paradigms. In interpretive paradigm, the researcher interacts with human subjects of the enquiry resulting in a change of perceptions of both parties. The role of the researcher in critical theory is transformative. The researcher initiates change in social relations and practice by helping to eliminate the bases for alienation and domination.

3.1.2 Qualitative Research Methods

Qualitative research is difficult to define as it means different things at different times and in different contexts. Merriam (1998: 4) defines qualitative research as an umbrella of concepts covering several forms of inquiry that enable us to understand and explain the meaning of social phenomenon with as little disruption of the natural settings

as possible. Denzin and Lincoln (1994: 2) note that qualitative research is multi-method in focus and involves an interpretive and naturalistic approach to its subject matter. This means that qualitative researchers study contemporary phenomena in their natural settings. They attempt to make sense of or interpret phenomena in terms of the meanings people bring to them. A phenomenon can be many things such as a program, an event, an activity, a problem, or an individual (Harling, 2002: 1). Bitsch (2001) reviewed qualitative research approaches applicable to empirical studies in agricultural economics. The author noted that qualitative research as understood in other social sciences is virtually non-existent in the American Journal of Agricultural Economics. Yet, qualitative research approaches lend themselves to different purposes and questions in agricultural economics. Areas of significant applications of qualitative research include: 1) description and interpretation of new or not well-researched issues; 2) theory generation, theory development, theory qualification, and theory correction; 3) evaluation, policy advice, and action research; and 4) research directed at future issues (p. 2).

Relevant qualitative research strategies that have increased significantly in the last two decades include 1) hermeneutic, phenomenology, and heuristic research; 2) naturalistic inquiry; 3) ethnomethodology; 4) grounded theory; 5) ethnography; 6) qualitative case study, and 7) participatory action research (Bitsch, 2001: 6-9).

Those research strategies can be distinguished from each other but all share the essential characteristics of qualitative research: 1) *holistic perspective* - a system has to be analyzed as a whole and cannot be portrayed by a few discrete variables and causal relationships; 2) *naturalistic approach* - unmodified realistic situations as they evolve are

the subject of analysis, 3) *emergent design*- the research design is not predetermined by decisions before the beginning of the empirical stage; 4) *researcher as research instrument* - researchers need direct contact with the researched, the situations under study, and the phenomena; 5) *empathic neutrality* - researchers are required to be aware of their own bias, bracket their personal agenda, and not take sides; 6) *qualitative data* - data collected is qualitative in nature; 7) *inductive analysis* - details and characteristics of data are examined in depth in search of relevant categories, dimensions, and relationships; and 8) *context sensitivity* - results are presented in their social, historical, and temporal context (Bitsch, 2001: 4-6).

A qualitative research method was appropriate for this study because the research problem under investigation is not well researched in agriculture. Therefore, no issues have been raised by previous research to be investigated using a quantitative survey. This study explores issues that do not have variables that can be easily identified and quantified. The study is explorative in nature and is expected to generate issues for future research through variable identification and theory quantification. Thus, the study mainly involves the use of data collection and analysis methods that are non quantitative.

3.2 Definition and Examples of Case Studies

A case study can be defined in terms of the research process involved, the unit of study, or in terms of the end product. Yin (2003: 13) defines case study in terms of the research process: “A case study is an empirical inquiry that investigates a contemporary phenomenon within its real life context, especially when the boundaries between phenomenon and context are not clearly evident.” Stake (1995: 6) defines case study by

focusing on the unit of study: “A case study is the study of a particularity and complexity of a single case, coming to understand its activity within important circumstances.” Merriam (1988: 2) defined a case study in terms of the product: “A qualitative case study is an intensive holistic description and analysis of a single instance, phenomenon, or social unit.” Hartley (1994: 208) defined case study as a “detailed investigation, often with data collected over a period, of one or more organizations or groups within organizations, with a view to providing an analysis of the context and process involved in the phenomenon under study.”

Case studies can be differentiated from other types of qualitative research in that they are intensive descriptions and analyses of a single unit or bounded system such as an individual, a program, an event, a group, an intervention, or a community (Merriam, 1998: 19). A case study is a single entity or a unit around which are boundaries. Miles and Huberman (1994: 25) think of case study as “a phenomenon of some sort occurring in a bounded context.”

Case study can be positivistic, interpretive or critical. Bassey (1999: 27) notes that Yin’s writing on case study tends towards the positivistic paradigm while Stake’s writing is rooted within the interpretive paradigm. The positivistic paradigm does not fit well with this study because of its underlying assumptions outlined earlier. For example, the primary data collection method for this study does not include experiments and surveys. The critical paradigm was neither appropriate because the study does not seek to uncover and confront forms of inequalities and injustices in ways that transforms society. The interpretive paradigm was suited for this study because the researcher sought to understand the context of the HRM practices for each case within the framework of the

respondents, i.e., an understanding of how the respondents interpret and give meaning to their situations was sought.

Case study is a suitable research design under various conditions. Westgren and Zering (1998) advocate a case study design when statistical analysis or simulation models are not suitable for the research tasks. Feigin et al. (1991) prefer a case study when a holistic in-depth investigation is needed. Yin (2003) recommends a case study design when the research focuses on addressing “how” and/or “why” questions, when the researcher has no control of the contextual variables, and when the relevant timeframe is the present. Merriam (1998) advocates for a qualitative case study design when the researcher wants to gain an in-depth understanding of a situation based on the perspective of those involved in the situation.

The case study research design has been a method for investigating the best management practices of American companies. Because of the limitations of traditional research methods (surveys and analysis of archival data) in addressing managerial related problems in agribusiness, case study design is finding application in conducting empirical studies in agribusiness (Sterns et al., 1998: 1).

Martel (2002) used a case study design to describe the practices that a select group of twenty-five outstanding U.S., European, and Asian companies use to find and keep high performing employees that have made them successful. The author collected data by interviewing senior managers in human resource functions. Examination of the companies’ annual reports, Internet sites, relevant internal documents, and other secondary source literature supplemented the interviews. The research findings are

organized by HRM practices where the author describes the practices in each of the twenty-five companies.

Collins (2001) used a case study design to investigate whether a “good company” can become a “great company” and, if so, how it can become great. The researcher identified companies that made a leap from good to great results and sustained those results for at least fifteen years. From an initial universe of companies that appeared on the Fortune 500 in the years 1965 to 1995, the researchers systematically searched and eventually found eleven “good to great” examples. The “good to great” companies were contrasted to a carefully selected set of eleven comparison companies to find what the good to great companies had in common that distinguished them from the comparison companies. Six other “unsustained” companies were used for comparison too. Analysis of each case was conducted using both qualitative and quantitative methods. Articles and published materials for each company were collected and systematically coded into eleven coding categories. Interviews with senior management and members of the boards for those companies were conducted, transcribed, and synthesized into content analysis findings. Intensive financial analysis of each company was also conducted for the 28 companies. The research results are reported as seven key characteristics that distinguish the eleven good to great companies from the comparison companies.

Eisenhardt (1989) used a multiple case design to investigate how executive teams make rapid decisions in the high-velocity microcomputer industry. Data was collected from fifty-six informants in eight different firms. Four sources of data were: 1) initial CEO interviews, 2) semi-structured interviews with each member of a firm’s top management team, 3) questionnaires completed by each member of the team, and 4)

secondary sources such as industry reports and internal documents. Interviews with CEOs consisted of 16 open-ended questions and the interviews were typically from 90 minutes to two hours long. The qualitative data was analyzed by searching for patterns and by combining the accounts of each executive and decision stories were developed. The research findings are reported as a set of propositions challenging the traditional views of strategic decision-making.

Peters and Waterman (1982) used case studies of 62 highly regarded companies in six different industries to investigate the best management practices. The companies were selected based on six measures of long-term superiority: 1) assets growth, 2) equity growth, 3) market value to book value ratio, 4) average return on total capital, 5) average return on equity, and 6) average returns on sales. Data was collected using structured interviews and by studying corporate documents. The interviews were structured using the 7-S framework- structure, systems, style, staff, skills, strategy, and shared value. The research findings are reported as a set of eight attributes that distinguish excellent and innovative companies from others.

Sterns et al. (2001) used a case study design to investigate the forces affecting the globalization process within the agrifood industry. Sixteen case studies were selected to cover four market categories: 1) firms that strictly operate in the domestic market, 2) new entrants into foreign markets, 3) experienced practitioners in foreign markets, and 4) former participants in foreign markets. The firms were selected based on purposive targeting of specific industries and types of firms. In-depth interviews were conducted with decision makers in eight firms. Research findings are reported by type of case and the hypothesized decision framework.

A case study research design was appropriate for this study because the research focused on addressing “how” questions. The study investigated a contemporary phenomenon, i.e., human resource management practices on dairy farms, where the researcher had no control over the contextual variables. The unit of analysis was the HRM practices that can be perceived as a bounded system that the researcher intensively described to gain an in-depth understanding of the practices from the perspective and context of the human subjects involved in the study.

Bassey (1999: 65) notes that research is a creative activity and every inquiry has its own unique character. Research is a systematic activity that goes through stages and there is need for stage-by-stage procedures to ensure that the findings are trustworthy. Stake (1995) identifies four stages for completing the case study method: 1) posing the research questions, 2) gathering data, 3) data analysis, and 4) interpretation. Merriam (1998) recommends five steps for conducting qualitative case study research: 1) identifying and establishing the theoretical framework, 2) identifying the research problem and purpose of study, 3) identifying the unit of analysis, 4) selection of case samples and data collection, and 5) data analysis. Following Merriam’s recommendation, the purpose of this study and research problem are defined in chapter one. The theoretical framework for this study is discussed in chapter two. The other steps in conducting a qualitative case study are discussed below.

3.3 Research Procedures

This study used the data that was collected for the Diagnosis and Management of Risks in Personnel Management (DMRPM) research project. The project, under the

umbrella of the North Central Risk Management Education Center (University of Nebraska, U.S.D.A), had the goal to support the development, adaptation, and use of efficient HRM practices in agriculture. Three individuals were involved in this study, the principle investigator of the DMRPM project, a research assistant and I. Two Spanish-speaking graduate students from the department of agricultural economics at Michigan State University volunteered to conduct interviews with Hispanic employees and transcribed the interviews into English. Interviews were conducted between April and May 2003. The target population was dairy farm enterprises that hired farm labor. All farms were located in the Lower Peninsula of Michigan.

3.3.1 *Research Protocol*

The unit of analysis for this study was the human resource management practices of the dairy farm enterprises. A research protocol was designed for the study and approved by the University Committee on Research Involving Human Subjects¹ (UCRIHS) prior to going into the field. The research procedures consisted of three parts: an overview of the research project, a consent form for the research respondents, and different interview guides. Three sets of open-ended questions were developed for different types of respondents: managers or owners of the dairy farm business, herdsman, and subordinate employees. The questions covered a wide range of HRM concepts such as recruiting and selection, training, compensation, employee-employer relationships,

¹ UCRIHS is an Institutional Review Board that reviews and approves all research projects that involve human subjects and materials of human origin before initiation, as required by the federal and university regulations. A human subject of research is an individual from whom an investigator obtains data by interaction or intervention or about whom the researcher obtains confidential information.

termination, and turnover. Also included were questions on the business performance, mission statement, goals, and strengths and weaknesses of the HRM systems. The rationale for interviewing at least three respondents for each case was to get multiple sources of evidence. Peers reviewed the interview guide before using it to conduct the interviews.

Interviews were the appropriate method of data collection because the focus of the study was on understanding the individual perceptions of the HRM practices within the dairy farm enterprises. King (1994) advocated that the qualitative research interview is most appropriate in two instances: 1) where the research focuses on the meaning of particular phenomena to the participants and 2) where individual perceptions of processes within a social unit such as a work group, department, or whole organization are to be studied. A copy of the interview guide is attached in Appendix 2.

3.3.2 *Selection of Cases*

Merriam (1998) identifies two sampling levels necessary for qualitative case study, the selection of cases to be studied and the within case sampling of respondents or issues to be studied. Selection of the cases was based on purposive sampling. Purposive sampling is based on the assumption that the investigator wants to discover, understand, and gain insights of issues of central importance to the purpose of the research. Patton (2002) argues that the logic and power of purposeful sampling lies in selecting information-rich cases for in-depth study. Merriam (1998: 61) further argues that the selection criteria in choosing the people or sites must be established before beginning

purposive sampling. For this study, the main selection criterion was that the dairy farms did not depend on family labor alone but employed hired labor.

There are different types of purposive sampling as outlined by Patton (2002: 230): extreme case sampling, intensity sampling, maximum variation sampling, snowball sampling, criterion sampling, theory-based sampling, and opportunistic sampling among others. For this study, maximum variation sampling was used. This method involves purposefully picking cases that can identify important common patterns that cut across all cases. The rationale for using this method was to capture the variation in HRM practices across dairy farms of different herd sizes.

A list of twenty dairy farm enterprises in Michigan was first compiled with the help of regional agricultural extension agents. Later, the managers of the farms were contacted by phone and the purpose of the study was explained to them. Six cases (sites) were selected based on the above criteria, the willingness of the managers to participate in the study, time constraints, location of farms, and financial constraints. Finally, interview appointment dates were set with the six managers who were willing to participate in the study.

3.3.3 Selection of Respondents and Conducting the Interviews

Three researchers conducted the face-to-face interviews. On the interview day, the researchers arrived at the research site before the appointment time and contacted the manager or owner of the dairy farm. As suggested by Merriam (1994: 84), the researchers explained to the managers 1) the purpose of the study, 2) who would have the final say over the study content, 3) how the privacy and identity of the respondents would be

protected, and 4) the approximate time it would take to complete the interviews. Managers on each farm were requested to suggest one herdsman and at least one non-supervisory employee to be interviewed. Each of the researchers played distinct roles in conducting the interviews. I interviewed the herdsmen, the principle investigator of the DMRPM project interviewed the managers, and a research assistant interviewed the non-supervisory employees.

The interviews on each farm were conducted at different locations where each researcher had privacy with the respondent. Except for one dairy farm where the manager was not available for interview on the appointment date, interviews with the three respondents on each dairy farm were conducted simultaneously. Before the start of each interview, the interviewers explained to the interviewees the purpose of the study and assured them that their responses would be kept strictly confidential to the extent allowed by the law. The purpose of the study and assurance of confidentiality for the responses provided was explained to each respondent. Respondents agreed to participate in the study by signing consent forms. All the interview sessions were tape-recorded and interview took between forty-five minutes and two hours. At the end of the interviews the interviewees were given time to volunteer any relevant information they wanted to share with the interviewer that was not covered by the interview guide questions. Interviewees were also given the opportunity to ask questions about the research project and the interviewers.

In total, twenty individuals in six different dairy farms were interviewed. Seven interviewees were managers, six were herdsmen, and seven were non-supervisory employees. On one farm, two managers were interviewed and on another farm, two non-

supervisory employees were interviewed. Two of the non-supervisory employees were interviewed in Spanish using bilingual interviewers (two volunteer graduate students) who conducted the interviews and later transcribed and translated the interviews from Spanish to English. The interviewees were predominately male except for two female managers.

Due to technical problems with the tape recorder, two manager interviews were not fully recorded but notes were taken. In another interview, the manager limited the interview session to forty-five minutes because of other commitments. One non-supervisory employee interview was not recorded because of technical problems with the tape recorder but notes were taken.

3.4 Data Management, Analysis, and Reporting

I transcribed some of my interviews verbatim. The research assistant and a hired transcriber transcribed the remaining interviews. Each researcher read their transcribed interviews to correct errors and fill in any blanks. I created a database to organize, retrieve, isolate, group, and regroup chunks of data in a meaningful way for analysis using qualitative analysis computer software (ATLAS/ti). A project was created (hermeneutic unit) where all research data, i.e., transcribed interviews, are linked.

After an initial exploration of the data, 950 codes were developed. The codes were linked to quotations in 19 transcribed interviews (primary documents). Those codes were later regrouped into nine major HRM themes (families) reflecting the specific research questions posed: 1) dairy farm missions, 2) dairy farm goals, 3) recruitment

practices, 4) selection practices, 5) compensations, 6) training and development, 7) termination, 8) voluntary turnover, and 9) costly mistakes made by employees. Appendix 3 provides an example of the codes hierarchy table and Appendix 4 provides an example of the codes hierarchy for the dairy farm goals family across the 19 interviews.

For the next stage of analysis, the codes in each family were grouped into sub-themes. For example, for the compensation family, the codes were grouped to the sub-themes of wages and benefits. The codes in each sub-theme were linked together using networks to enhance the retrieval of quotations. Appendix 5 provides an example of a network to link codes that explain the perception of herdsmen on the role of non-supervisory employees in achieving the business goals. The lines converging to the box on how to achieve goals indicate the tactics that herdsmen use to facilitate the non-supervisory employees achieve the set goals. For example, training employees how to milk and how to assist a calving cow is part of the training tactic used to achieve set goals on dairy management.

Two levels of analysis were done as recommended by Merriam (1998: 194) on how to analyze multiple case studies, within-case analysis and cross case analysis. For each of the HRM themes coded, a within case analysis was done based on the quotations of the respondents interviewed. This was followed by the across case analysis where the results were compared to search for similarities or differences in response to each specific research question. Research findings are reported based on each HRM practice for each case and across cases. Finally, drawing from the theoretical framework used, the results of the study are summarized as a set of researchable propositions.

3.5 Limitations of the Study

This study has several limitations. First, the interviewers relied on the managers or owners of the dairy farms to select the herdsman and non-supervisory employee to interview. This implies that the managers or owners may have selected employees who would speak positively about their farms and not reveal the problems the farms may be facing. Second, the researchers were constrained by time. Interviews in five sites were conducted over a one-month period with single visits to each site. One farm was visited twice because the manager was not available in the first visit. The researchers conducted the interviews before summer because managers and employees on dairy farms are very busy in summer such that it is not possible to schedule an appointment with them. A key concern for qualitative case study is to obtain rich and deep insights of the phenomenon under investigation. For a deep look into the HRM practices of dairy farms, more time would have allowed for more information to be collected. Face-to-face interviews with the managers and employees, and follow up telephone conversations with managers to verify the accuracy of the data collected, are the main sources of information upon which the results of this study are based. No secondary data was available to validate information from the interviews. Availability of secondary data such as internal documents of the dairy farms would have allowed for data triangulation. Finally, the results of this study cannot be generalized to all dairy farms in Michigan and need to be interpreted with caution because only six cases were involved. Those six cases are not representative of dairy farms in Michigan.

CHAPTER FOUR

DATA ANALYSIS

This present chapter draws together the data analyses and outcomes. The chapter begins by providing a profile of the cases followed by the strategic planning practices. Specific HRM practices analyzed include recruitment, selection, training and development, and compensation. This is followed by analyses of costly mistakes by employees and HRM outcomes such as termination, voluntary turnover, and reasons why employees would accept alternative employment offers. The chapter ends by providing a case wise comparison.

4.1 Profile of the Dairy Farms

This study investigated the labor management practices of six family owned dairy farms in Michigan. The largest farm was registered as a corporation. The herd size of the six farms ranged from 500 to 8,000. The number of cows milked per day ranged from 225 to 3,200 cows with an average of 961 cows. The farms had variations in milking practices. Four farms had three milking shifts a day while two farms had two milking shifts. Number of fulltime employees ranged from 5 to 75 employees with an average of 21 employees. The percentage of Hispanic employees² on each farm varied from 29% to 88%. Overall, employees of Hispanic descent comprised 49% of the total workforce. Most of the employees were employed year around and worked between 50 and 78 hours per week. Two farms employed high school students on part-time basis besides their

² The term Hispanic employee refers to farm workers who share certain historical backgrounds and cultural traditions, in particular, the Spanish language. They speak English as their second language.

fulltime employees. The average number of cows milked per fulltime employee on each farm ranged from 37 to 68 cows and the average for the six farms was 52 cows per fulltime employee. Table 4.1 provides the descriptive statistics of the six cases.

Table 4.1 Descriptive Statistics of the Case Studies (n = 6)

	Minimum	Mean	Maximum
Cows milked per day	225	961	3,200
Number of fulltime employees	5	21	75
Hispanic employees (%)	29	49	88
Number of cows/fulltime employee	37	52	68
Gross revenue/fulltime employee (\$1000)	130	193	248
Gross labor expenses/fulltime employee (\$1000)	31	36	40
Gross labor expenses/Gross revenue (%)	15	20	30

For the six dairy farms, the ratio of gross revenue per fulltime employee in the year 2002 ranged from \$130 thousand to \$248 thousand. The average ratio for the six cases was \$193 thousand. On average, milk sales represented 80% of the gross revenue. The remaining 20% of gross revenue came from sale of bulls and heifers or from crop enterprises. The ratio of gross labor expenses per fulltime employee in the same year ranged from \$31 thousands to \$40 thousands. The average ratio for the six cases was \$36 thousands. Gross labor expenses ranged from 15% to 30% of gross revenue and the average for the six cases was 20%. Five managers reported to be satisfied with the financial performance of their farms despite the prevailing low milk prices. However, the managers were concerned that persistent low milk prices may eventually affect the financial performance of their farms.

Analysis of the financial information of the dairy farm enterprises for the year 2000 shows that on average larger farms had higher labor expenditure per fulltime employee (\$39,500) than smaller farms (\$25,531). Smaller farms also had higher revenue per employee (\$162,351) than larger farms (\$131,667). Consequently, smaller farms had higher gross returns per fulltime employee - average gross revenue minus average gross labor expenses- compared to larger farms. Smaller farms also had a higher percentage of Hispanic employees (56%) compared to larger farms (37%). The number of cows milked per fulltime employee on smaller farms was higher (49) compared to larger farms (40). Table 4.2 provides comparative summary statistics for larger and smaller farms. Contrary to previous studies findings that labor efficiency increases with increase in herd size (Hadley et al., 2002; Bewley et al., 2001), results from this study indicate that smaller farms are more labor efficient compared to larger farms.

Table 4.2 Comparison of Larger to Smaller³ Farms Statistics

	Large Farms^a (n=3)	Small Farms^b (n=3)
Hispanic Employees (%)	37	56
Labor costs/Revenue (%)	30	16
Number of cows milked/Employee	40	49
Total Revenue/Employee (\$)	131,667	162,351
Total Labor Expenses/Employee (\$)	39,500	25,531
Gross Returns/Employee (\$)	92,167	136,820
Milk Sales/Employee (\$)	109,273	130,456

^a Large farms milk >500cows per day, ^bSmall farms milk < 500 cows per day

³ Smaller farms are used here in a relative sense. Out of 3,200 dairy farms in Michigan in 2002, only 9.7 % of the farms (310 farms) had more than 200 milk cows and only 2.2% (70 farms) had more than 500 milk cows (Michigan Agricultural Statistics Services, 2003).

Managers of smaller farms worked alongside their hired employees in performing daily chores like vaccination, artificial insemination and feeding the herd. Managers of larger farms left the daily chores to the hired employees and concentrated on managerial activities. The managers reported that they did not face competition for employees among dairy farms because of the high unemployment rate and availability of Hispanic workforce.

The herdsmen in all cases reported to the managers who were also the owners of the farm enterprises. Herdsmen supervised employees who either reported directly to them or to the managers. The main responsibilities of the herdsmen included herd health management, herd reproduction management, calf management, record keeping, and procurement of general and veterinary supplies for the farms. The main responsibilities of the non-supervisory employees included milking, calf rearing, preparation of animal feeds and feeding the animals, maintenance of parlor facilities, and taking care of the herd reproduction, for example, heat detection and artificial insemination. Herdsmen had worked in their current positions for an average of 5 years, ranging from 1 year to 12 years. Non-supervisory employees' average job tenure was 5.25 years, ranging from 3 years to 12 years.

4.2 Strategic Planning

Strategic planning involves setting goals for the farm and working out a systematic process or set of actions to achieve those goals. Terms such as purpose, vision, mission, strategy, goals, and tasks are usually associated with strategic planning. The researcher investigated whether dairy farm managers engaged in strategic planning.

4.2.1 Mission of the Dairy Farms

Managers and herdsman were asked to state the mission of their farms. Table 4.3 provides a summary of the perceived focus of the missions. Except for one case, managers or their herdsman could articulate what they perceived to be the mission of their farms whether written in the form of a mission statement or not.

Table 4.3 Focus of the Mission Statements of Dairy Farms

Focus of Mission Statement	CASE A	CASE B	CASE C	CASE D	CASE E	CASE F
Expansion focus		✓				✓
Maintain current size				✓	✓	
Value creation focus					✓	
Profitability focus			✓			
Milk quality focus			✓		✓	✓
Employees focus			✓	✓	✓	

The stated mission statements suggest two main strategies for the farms, either expansion by increasing herd size and number of employees or maintaining the current size of the farms. Managers of two farms wanted to expand their business by increasing the herd size and overall milk production. In one case, for example, the managers stated that the mission of their farm is to expand by increasing the herd size. The herdsman of this farm elaborated that “Our plan is to grow entirely with the animals and in the next 4 to 5 years we can be milking 1200 to 1500 cows.” Although this is stated like a long-term goal, the managers and herdsman considered it to be their mission. Another manager stated that he

intended to expand the enterprise by increasing the herd size. His herdsman reported that the mission of the farm is to be the “largest dairy farm in the state of Michigan by producing the highest quality of milk and achieving the highest milk yield per cow.” The herdsman perceived that their mission was to surpass the average milk yield per cow in the state of Michigan.

Two managers, one from a larger farm and another from a smaller farm, did not want to expand their farm enterprises but to maintain the current sizes as long as they remained profitable. The manager of the smaller farm did not talk explicitly about the mission of his farm. He stated that his barns were small to accommodate the current herd size but he did not intend to invest in another barn. His plan was to maintain the farm at its current size as long as it generated profits. The manager also mentioned that he strove to create a good working environment where his employees would like to work and be willing to recommend other people to come and work. This suggests that the mission of the farm has a focus on employees.

The written mission statements of another farm focused on employees indicating that the manager regarded his employees as a key resource in remaining competitive. The manager stated that the mission of his farm is “to have the right people with the right skills and knowledge, and to manage and engage the employees so that they can continuously improve and create value for the farm.” Key words in the written statement included “have the right people with the right skills and knowledge,” suggesting a commitment to recruit qualified employees. Other key words in the statement are “to manage and engage the employees so that they can continuously improve and create value,” suggesting that employees and value creation are the focus of their mission. The

manager considered the mission statement of the farm as an important tool in presenting a consistent view of the management's expectations to the hired employees. The herdsman and a non-supervisory employee perceived the mission of the farm as striving to be the best dairy farm in the state of Michigan by producing high quality milk. This suggests that quality milk is one of the focuses of the farm's mission.

Another manager stated that the written mission statement of his farm was "to get prosperous and profitable by creating a good working environment for employees, producing high quality milk and feed supplies while achieving adequate financial rewards for the owners." Key words in the statement include "creating a good working environment for employees," suggesting a focus on employees; "produce high quality milk and feed supplies," indicating a focus on quality; and "achieving adequate financial rewards," indicating a focus on profitability.

4.2.2 Goals of the Dairy Farms

Table 4.4 provides a summary of the goals of the farm enterprises across the six cases. Except for two cases, one large farm and one small farm, the long-term goals of managers in four cases were expansion through increasing herd sizes, number of cows milked per day and building new facilities.

Although the managers in the participating cases were not asked the reasons why they wanted to expand, Hadley et al. (2002: 2056) found that dairy farms in Michigan and Wisconsin wanted to expand for three major reasons: to improve profitability, to improve quality of life of owners and to replace worn out facilities. Two managers

mentioned low milk prices as the major hindrance to the implementation of their expansion plans.

Table 4.4 Dairy Farm Goals across the Six Cases

Dairy Farm	Case A	Case B	Case C	Case D	Case E	Case F
Business Strategy Goals						
○ Expand business in the long-run	✓	✓	✓			✓
○ Maintain current size				✓	✓	
○ Reduce operational costs			✓	✓		
○ Maintain sound financial position				✓		
Dairy Management Goals						
○ Keep the cows healthy	✓	✓	✓		✓	✓
○ Produce high quality milk		✓	✓	✓	✓	✓
○ Increase total milk production		✓	✓	✓	✓	✓
○ Improve milk yield per cow			✓	✓		✓
○ Increase the conception rate of cows		✓	✓	✓	✓	✓
○ Reduce mortality rate of calves		✓	✓	✓		✓
Employee Management Goals						
○ Reduce employee turnover		✓				
○ Create a conducive work place for employees				✓	✓	
○ Improve training		✓	✓			✓
○ Comply with OSHA regulations					✓	
Other Goals						
○ Computerize the farm enterprise					✓	
○ Community involvement					✓	
○ Maintain clean parlor				✓		

Two other managers wished to expand their farms but maintain the current number of employees. This suggests that they expected labor efficiency to increase with larger herd size. Managers and their partners set the long-term goals in all the cases. However, the herdsman of one case reported that his managers did not disclose to the employees the long-term goals they intended to achieve. He did not know the long-term goals of the farm except that the manager wanted to expand in future. However, his managers did not have a specified target herd size they intended to achieve or a time frame for the execution of the expansion plan.

Managers in two farms wanted to gain the respect of the community in their neighborhood. One manager wanted to make a positive contribution by being involved in environmental issues that affected the community while the other manager aimed at keeping his milking parlor clean and having a good working relationship with his employees. He perceived a positive image in the community as essential for attracting and retaining qualified employees.

The short-term goals of the farms focused on achieving efficiency in dairy management by keeping the cows healthy, producing premium milk, increasing overall milk production and improving reproduction. Three farms with small herd sizes aimed to increase the milk yield per cow and four farms aimed to reduce the calf mortality rate. Five farms aimed to keep the herd healthy, produce high quality milk as measured by low somatic cell counts and improve breeding by increasing the conception rate of cows. These goals were stated in specific and measurable terms useful for decision-making and monitoring of farms' performance. Appendix 6 provides examples of the goals as stated by the respondents.

One farm aimed at improving information management for timely managerial decisions by computerizing the farm enterprise. The manager of another smaller farm strove to keep the farm financially solvent.

On employee management, managers of three farms had employee training as their priority. One manager aimed to reduce employee turnover and two managers aimed to improve their labor efficiency. Two managers aimed to create an environment where employees would like to work. Only one manager mentioned compliance with Occupational Safety and Healthy Administration (OSHA) regulations as one of their employee management goals.

The herdsmen were more articulate of the short-term goals than managers and non-supervisory employees in five cases. Herdsmen and non-supervisory employees who had direct responsibilities for specific aspects of the farms such as milking, feeding or reproduction set the short-term goals in three cases. For instance, one herdsman said that his managers set the long-term goals of the enterprise while he engaged in setting short-term goal such as when to dehorn, dock tail or vaccinate the herd. The manager and employees on one farm with smaller herd size were all involved in setting short-term goals. An observation emerging from this study is that managers of farms with larger herd sizes delegated the responsibilities of setting short-term goals on dairy management to their herdsmen and non-supervisory employees. On the contrary, managers of farms with smaller herd sizes worked closely with their herdsmen and non-supervisory employees on deciding which short-term goals to strive for.

Managers of two cases engaged the services of external consultants to review their goals. Language was mentioned as a barrier in communicating the goals of the

farms to Hispanic employees in two cases. The herdsman in one of those cases planned to learn Spanish to be able to communicate the goals of the farm to Hispanic employees. The manager in the other case hired an external bilingual consultant to communicate the goals of his farm to Hispanic employees.

4.3 Human Resource Management Practices

4.3.1 Recruitment Practices

Table 4.5 summarizes the recruitment practices across the six cases. Employee referral was the most common recruitment method. One non-supervisory employee reported having been recruited by his brother who was an incumbent employee in one case. The manager in another case reported to have hired two feeders that were recruited by his current employees. Another manager reported that he turned to his employees when recruiting because they could provide information about the work ethics of the persons that recruited and recommended for employment. These results are consistent with recruitment practices in the lumber industry where employee referrals are the most common recruitment method (Michael and Leschinsky, 2003).

Table 4.5 Recruiting Practices

Recruiting practices	CASE A	CASE B	CASE C	CASE D	CASE E	CASE F
○ Employee referrals	✓	✓	✓	✓	✓	✓
○ Walk-in	✓	✓	✓	✓	✓	
○ Word of mouth	✓	✓		✓		✓
○ Advertisement		✓				✓

Managers in five cases accepted walk-in applicants. The potential employees visited the farms, filled out job application forms and waited to be contacted when a

position was vacant. This suggests that the farms have a database of potential candidates to recruit when employee referrals do not yield qualified candidates. A non-supervisory employee in one case reported to have secured his current employment by visiting the farm, filling out the application form and visiting the farm twice a week until when he was hired. Two farms located near high schools hired part-time students on a walk-in bases too.

Word of mouth was used as a recruitment method in four cases. For instance, the current herdsman of one case reported to have learned that the farm had a vacant herdsman position from his former college professor. He visited the farm and filled in the job application form. The manager later contacted him for an interview and he got hired for the position he applied for. The managers of two cases reported to recruit high school students through word of mouth to their academic advisors or through other students working on their farms.

Recruitment through advertisement in local newspapers was rare for the participating cases. Two managers reported that they recruited by advertising in the local newspapers only for positions that required specialized skills such as truck driving or jobs that required extensive experience. The other managers said that they rarely advertised for vacant positions and none had recruited through advertisement in the recent past.

A herdsman in one case reported to have been hired on part-time basis and later promoted to a fulltime supervisory position based on his education qualifications and experience. This indicates the use of an internal labor market for recruiting supervisory personnel.

Consistent with Maloney (2002) research findings, this study support the notion that dairy farm managers have come to appreciate Hispanic employees as an important part of their workforce. Managers in all cases reported to hire Hispanic employees mainly for the milking positions. Hispanic employees seemed to be highly networked and capable of recruiting other Hispanics who are willing to work on a dairy farm. The managers relied on their current Hispanic employees to recruit new employees and reported that this practice had served them well. Two managers reported that attracting and retaining Hispanic employees was easy because most of them lacked the educational qualifications and technical skills that would enable them find employment in other industries. A manager and herdsman in two different cases reported that they started hiring Hispanic employees because of the difficulty in attracting and retaining American employees⁴. The herdsman reported that the farm started hiring Hispanic employees about three years ago because they had a shortage of American employees willing to work on dairy farms even after advertng in local newspapers. Consistent with a previous study, dairy farm managers in New York also cited shortage of American employees willing to do dairy chores as their main reason for hiring Hispanic employees (Maloney, 2002). Yet, another manager said that recruitment of farm employees was not difficult because of the high unemployment. Those results indicate variability in the managers' perception of recruitment difficulty.

Hispanic employees were perceived to have better work ethics and easier to retain compared to American employees. For example, one manager said that turnover rates on his farm had drastically decreased after hiring Hispanic employees. Another manager

⁴ American employee refers to farm workers who speak English as their first language and are not of Spanish culture or origin.

said that his current seven Hispanic employees could complete the same workload that was done by thirteen American employees.

There was no noticeable difference in the recruitment practices based on the herd sizes.

4.3.2 Selection Practices

Managers in three cases explained that they selected new non-supervisory employees based on their kinship or friendship ties with current employees. They perceived that such employees tend to get along well and achieve high productivity. According to the herdsman of one case, an additional reason for selecting employees based on their kinship or friendship ties with current employees is that employees with good work ethics tend to recommend individuals with similar values. The practice had been successful especially for hiring Hispanic employees who mainly worked in the milking parlor where teamwork is necessary.

One manager explained that he avoided hiring someone who had been in different employments over a short period and those who did not have a driving license. For applicants recruited through job advertisements in local newspapers, managers in two cases reported to conduct up to three interviews before deciding whom to hire. The main basis of selection in one of those cases was the managers' perception of how compatible the individual would be working with current employees, the work experience of the individual, and the references provided by previous employers. One herdsman reported to ask prospective American employees whether they were willing to work with Hispanic employees during the selection interviews. This was aimed at ensuring that the hired

person would be able to work along with incumbent Hispanic employees. Hispanic employees on this farm come from the same geographical region in Mexico indicating that the farm selected new employees based on kinship or friendship ties. While managers who recruited through advertisements in local newspapers conducted up to three interviews and checked references to obtain information about the applicants, managers who recruited through employee referrals mostly relied on the information provided by their recruiting employee.

The most important factors in selection of herdsmen in all six cases were their prior work experience and educational qualifications. Herdsmen on all farms had skills in dairy management prior to being employed in their current positions. Four herdsmen had prior experience working for different dairy farms before being hired in their current positions and three of those herdsmen had college degrees in dairy science. Herdsmen who did not have college degrees either had extensive experience working on another dairy farm or long job tenure in their current employment.

4.3.3 Training and Development Practices

Table 4.6 summarizes the training practices across the six cases. All six farms provided on-the-job training to new employees regardless of their prior experience working on a dairy farm. However, the training practices varied across the cases. The herdsmen in two cases first trained new non-supervisory employees on the milking routines before assigning them to work with a team of coworkers for further training.

For instance, one herdsman reported that after training new non-supervisory employees, he assigned them to coworkers who provided further training in order "to

foster teamwork spirit.” New non-supervisory employees in the other four cases received the on-the-job training by working alongside experienced coworkers and the training took between three and fourteen days.

Table 4.6 Training and Development across the Six Cases

Training and Development	CASE A	CASE B	CASE C	CASE D	CASE E	CASE F
<i>Hands on the job training provided by:</i>						
○ Coworkers	✓	✓	✓	✓	✓	✓
○ Herdsman		✓				✓
○ Manager trains herdsman		✓			✓	✓
<i>Training by MMPA^a:</i>						
○ Non supervisory employees	✓			✓	✓	
○ Herdsmen			✓			
<i>On site training by consultants:</i>						
○ Veterinarian	✓					
○ Nutritionist	✓	✓	✓			
<i>Employees trained on:</i>						
○ Animal healthcare	✓				✓	✓
○ Cattle feeding/nutrition	✓	✓	✓			
○ Milking	✓	✓	✓			
○ Calf rearing		✓	✓			
○ Assisting calving cows		✓				✓
○ Business management skills					✓	
○ Safety measures					✓	
○ Leadership					✓	

^aMMPA – Michigan Milk Producers Association

On one of the farms where experienced coworkers trained new non-supervisory employees, the herdsman identified the tasks that new employees were not competent doing and provided the necessary training. The manager of another farm hired non-supervisory employees with no prior experience and trained them for two weeks by

assigning them to work alongside experienced employees. On yet another farm, new non-supervisory employees in the milking department first watched a video on the milking routines of the farm before spending half a day in the milking parlor watching how experienced employees performed the milking routines. Later, the new employees were assigned to work alongside current experienced employees who trained them for two weeks. Herdsmen in three cases reported that their farms had developed their own standard operating procedures for milking, i.e., routines, that all employees were expected to strictly follow.

Managers on three farms trained their new herdsmen on different aspects of managing their farms by working alongside them for about two weeks before leaving them to work unattended. A herdsman of another farm was first hired for the assistant herdsman position and the incumbent herdsman trained him on the milking routines and worked with him for a while before he picked up the milking pace. In yet another farm, the employee that he was replacing trained the herdsman for two weeks.

Besides the basic on-the-job training for new employees, managers provided additional on-site and off-the-job training. Managers on three farms sponsored their non-supervisory employees to attend the annual milking training programs organized by the Michigan Milk Producers Association (MMPA). One of those managers, for example, sponsored about six non-supervisory employees annually to attend the milking training program. Another manager sponsored his herdsman to attend the milking training program. The herdsman of yet another case reported to attend refresher courses on dairy science organized by Michigan State University.

Three managers also hired consultants to provide specialized training to employees. The three managers hired nutrition consultants who provided on-site training in nutrition management, cattle feeding, and calf rearing. One of those managers also hired a veterinarian consultant who provided on-site training in animal healthcare and how to assist cows in labor.

One of the problems faced by managers who hired Hispanic employees was the language barrier between them and the employees. Many new Hispanic employees do not have a command of English language. One manager hired a bilingual consultant to communicate his aspirations to the Hispanic employees and train them on how to follow the standard operation procedures in doing certain tasks. New Hispanic employees were first trained by a bilingual employee and later assigned to work in a team with at least one bilingual employee in three cases. One manager reported that agricultural extension agents and some private firms in the region organized training seminars on dairy management that were specifically tailored for Hispanic workers. However, the manager had not been able to sponsor his employees to attend those seminars.

The most common off-the-job training provided to employees was animal healthcare, cow feeding, and milking programs. Employees on three farms had attended off-the-job training programs on animal healthcare, cow feeding, and milking. Employees on two farms had attended off-the-job training programs on calf rearing. Besides providing training on the technical aspects of dairy management, the manager of one farm sponsored his employee for training on leadership skills. The employee was in charge of directing Hispanic employees. Except for this case, no other farm provided training on people management skills to its employees suggesting that dairy managers

have not yet recognized the importance of developing the leadership skills of their supervisory personnel.

One manager sponsored his employees to attend the annual trade show where they learned about different aspects of dairy management. Hispanic employees in another case learned about different aspects of dairy management by reading a Spanish magazine that the manager provided.

Safety training was provided to all employees in only one farm. New employees on two other farms were cautioned on safety measures when receiving the on-the-job training. For instance, the herdsman of one farm cautioned employees not to stick their heads under the cows' udder when milking to avoid being kicked. Another herdsman said that he teaches his employees not to do any tasks that is not safe for them or might result in injuring other employees. The manager and herdsman of yet another farm said that they cautioned employees on safety measures during their monthly staff meetings.

Five farms were managed by their owners and did not have different managerial positions. Therefore, only one farm had career advancement opportunities for its two herdsmen. The manager of this farm trained his managerial personnel on different administrative issues. He expected the two herdsmen would assume higher managerial roles and mentor the employees working under their supervision to take over their positions.

One manager of the farms with smaller herds admitted that neither he nor his herdsman was competent in training their employees: "We try to do it but I do not think we are as good as we could be." Overall, farms with larger herds provided more training opportunities to their employees compared to farms with smaller herds.

Farm employees expressed their different training needs. Table 4.7 summarizes the training needs as perceived by employees across the six cases. The most desired training by non-supervisory employees was on animal healthcare. Non-supervisory employees on three farms desired training on animal healthcare and an employee in one of those farms desired training on computer operation.

Table 4.7 Perceived Training needs of Employees

Desired training	CASE A	CASE B	CASE C	CASE D	CASE E	CASE F
<i>Non supervisory employee</i>						
○ Spanish language	✓				✓	
○ English language		✓				
○ Animal healthcare		✓	✓			✓
○ Computer operation	✓					
○ Driving tractor			✓			
<i>Herdsmen</i>						
○ Spanish language		✓				
○ Leadership skills		✓				
○ Business management skills					✓	

A Hispanic employee in one case expressed the desire to be trained how to speak English. The herdsman in this case also expressed the desire to be training how to speak and write the Spanish. This result indicates the need to overcome language barriers for the managers who had made transition from hiring American employees only to hiring Hispanic employees. The herdsman who desired training on Spanish language also desired to be trained on leadership skills. Another herdsman wanted training on business management skills.

4.3.4 Compensation Practices

Wages and benefits provided to employees varied across the six cases. Entry-level wage rate for non-supervisory employees ranged from \$5.50 to \$9.00 per hour. The pay varied depending on the experience of an employee, whether the employee was provided with housing or not, and herd size of a farm. The wage rate for current non-supervisory employees ranged from \$8.00 to \$10.00 per hour. Non-supervisory employees in all cases were paid on hourly basis. The manager of one farm changed the pay system from hourly pay to monthly salaries but later reverted to hourly pay. This implies that it is cost effective to pay non-supervisory employees on hourly basis rather than monthly salaries.

Non-supervisory employees in two cases who were not provided with housing started at a higher wage rate than those provided with subsidized housing, suggesting that wages depended on whether an employee was provided with housing or not. In one of those cases, entry-level non-supervisory employees provided with housing started at \$6.00 per hour while those without housing started at \$7.00 per hour. In the other case, employees with housing started at \$7.50 per hour and those without housing at \$9.00 per hour.

In three cases, employees with experience started at a slightly higher pay than employees with no prior experience suggesting that experience is an important factor in remuneration. For example, in one case, entry-level non-supervisory employees with prior experience started at \$7.50 per hour and those without experience started at \$7.00. In another case, entry-level wage rate for non-supervisory employees with no experience was \$6.00 per hour while employees with experience had a starting wages of between \$7.00 and \$8.00 per hour.

The hourly wage rate for herdsmen ranged from \$12.00 to \$20.00. Herdsmen and managerial personnel in two cases received a monthly salary instead of hourly pay. The year 2000 total compensation, i.e., wages and all benefits, for the herdsmen across the cases ranged from \$32,000 to \$65,000. Herdsmen in all cases earned more compared to non-supervisory employees. Employees in all cases were not paid more than their regular wage rates for working overtime and only one case were employees paid double their regular wages for working on public holidays.

Comparing the wage rates across cases, the results indicate that farms with large herd size (>500 cows, n = 3) provide higher pay compared to farms with smaller herd size (<500 cows, n = 3). The entry-level wage rate for non-supervisory employees on larger farms ranged from \$6.00 to \$9.00 per hour while that of smaller farms ranged from \$5.50 to \$8.00. Likewise, the hourly wage rate of herdsmen in larger farms ranged from \$14.00 to \$20.00 per hour compared to wages in smaller farms that ranged from \$12.00 to \$14.00.

On wage increases, three farms increased the pay of their new employees annually by between \$0.25 and \$0.50 depending on an employee's job tenure, performance evaluation, and the year-end financial performance of the farm. The manager of one of those cases increased the pay of non-supervisory employees by \$0.25 after every three months for a period of 18 months. The maximum wage rate for milkers on this farm was \$9.00 per hour and was typically achieved after 18 months in employment. Milkers also become entitled to retirement benefits after 18 months in employment. Another manager increased the annual pay of non-supervisory employees by about 3% of their current wages. The manager of the other case increased the pay of

his employees at his discretion. He did not have a specific time of the year when he increased the pay and neither did he have a specific figure of increase. Overall, two cases had guaranteed annual pay increases for all fulltime employees while pay increases in two other cases depended upon the year-end financial performance of the farms and the manager's evaluation of the performance of each employee. Respondents in two cases did not respond to the question on pay increase.

Results from the six cases also indicate that the information on exactly how much each employee earned is kept confidential between the employee and the manager. Herdsman and non-supervisory employees in all cases could not tell exactly how much each individual on their farms earned. They only had a general idea of the expected wage range for different positions. For example, one herdsman reported that he did not know the wages of each employee because it varied according to an employee's tenure in employment, responsibilities, and educational qualifications.

The manager of one farm provided incentives to employees for heat detection and successful insemination. Each employee also received a bonus of \$50 every month end if there was zero calf mortality. Employees on another farm got incentives for achieving low somatic cell counts in milk production or increased milk production. One manager provided employees with bonuses of between 10% and 20% of their annual wages at year-end depending on the financial performance of the farm. However, the bonus that an employee could receive was capped at \$4000. Another manager provided employees with bonuses worth 3% their annual wages at year for achieving the dairy management goals. The manager of yet another farm occasionally provided bonuses to employees based on his perception of their commitment and productivity at work. Those results suggest that

managers in five cases provide a linkage between pay and performance through the use of incentives to motivate employees.

Table 4.8 summarizes benefits provided to employees across the six cases. Housing was available on the existing farm property in three cases. Managers in two other cases rented houses for employees outside the farm property.

Table 4.8 Benefits Provided to Employees

	CASE A	CASE B	CASE C	CASE D	CASE E	CASE F
Guaranteed annual wage increases	✓	x	x	x	✓	x
Housing:						
o All employees	✓					x
o Hispanic employees only		✓	✓	✓	✓	x
Paid vacation:						
o Non supervisory employees	✓	✓	✓	✓	✓	✓
o Herdsman / herdsmen	✓	✓	✓	✓	✓	✓
Healthcare plan:						
o Non supervisory employees	✓	✓	x	x	✓	✓
o Herdsman	✓	✓	✓	✓	✓	✓
Retirement plan:						
o Non supervisory employees	✓	x	x	x	✓	x
o Herdsman / herdsmen	✓	x	x	✓	✓	✓
Use of farm equipment:	✓			✓	✓	✓
Uniforms	✓	✓	✓	x	✓	x
Farm produce (beef)	✓		✓			✓

Benefit provided Benefit not provided No response

Except for one case that provided housing to all employees, four cases provided housing to Hispanic employees only. Housing was provided to single Hispanic employees only in one of those four cases. The herdsman in one of those cases reported that housing, which included heat, electricity, and water, was provided to Hispanic employees only. Managers who provided subsidized housing, i.e., charged rent that is lower than the market rate, and deducted rent from the employees' paychecks at the end of the month. Employees in one case were not provided with housing.

All six cases provided paid vacation of at least 40 hours all fulltime employees. However, the vacation time varied across the cases. Vacation time in two cases depended on the job tenure of an employee. Typically, employees with job tenure of less than two years had one week of vacation while those with more than two years but less than nine years had two weeks of vacation. Employees with job tenure of more than nine years had three weeks of vacation. Employees in one case were entitled to vacation after six months in employment while employees in another were entitled for vacation after one year in employment. Employees in yet another case had the option of not taking their vacation time and getting paid for the hours worked.

Healthcare insurance was provided to all fulltime employees in four cases and two other cases provided healthcare insurance to herdsmen only. The latter farms had smaller herd sizes compared to the other farms suggesting that farms with larger herds are likely to provide healthcare insurance to all employees. The manager in one case mentioned that one of the non-supervisory employees preferred to receive cash payment instead of the healthcare insurance. Fulltime employees in two of the four cases were entitled to healthcare insurance after 90 days in employment. Managers in all six cases provided

healthcare insurance plans to their employees only. However, employees could include their families on the healthcare insurance plans on cost sharing basis suggesting that providing healthcare insurance to employees and their families was not cost effective for the dairy farm enterprises.

Four cases provided different forms of retirement benefits. One case provided a profit-sharing plan where the employer made annual contributions based on the farm's profit towards the plan. The herdsman of this farm reported that an employee with one year of job tenure was entitled to 20% of his or her part of the profit-sharing contributions at termination, resignation, or retirement. The rate increases by 20% each year such that an employee five years of job tenure was entitled to 100% of his or her share of the contributions. Another case provided a pension plan to all fulltime employees with more than two years of tenure. Employees were required to contribute 10% of their monthly wages towards their retirement. The manager of yet another case provided a 401(k) plan to the herdsman who monthly contributions towards his retirement. The employer did not match up the contributions made by herdsman. The employer of yet another farm with a smaller herd offered retirement plans to only two employees who had long employment tenure. However, one of the employees was more concerned about meeting his current financial needs and opted to get pay increases instead of the retirement plan.

From the foregoing analysis, and except for one case, two cases with larger herds provided retirement benefits to both herdsmen and non-supervisory employees. However, contrary to expectation that smaller farms would not provide retirement benefits to its employees, the two cases with the smallest herds provided retirement plans to their

herdsmen. One case with larger herd size and another with smaller herd size did not provide retirement plans to any of their employees.

Non-monetary benefits that the farms provide to employees included permission to use the farms' equipment, uniforms, and beef. Employees in four cases were allowed to use their farms' equipment for personal work at no cost. Managers in three cases gave their employees meat at least twice a year. Managers in four cases provided employees with uniforms on cost sharing basis. Employees in one of those cases contributed about 80% to 90% of the total cost of buying and cleaning their uniforms. Employer in another case covered 50% of the uniform cost. Wearing of uniforms was mandatory in three cases and employees had to pay for the cost of cleaning their uniforms. Wearing uniforms was optional in one case.

Factors that determined the compensation package across the six cases included the herd size of the farm, duties and responsibilities of an employee, an employee's work experience and job tenure, and the year-end financial performance of the farm enterprise. Managers in three cases reported to reduce their operational costs by restricting the number of hours employees could work and by not providing pay increases when the financial performance of their farm enterprises was poor.

The most common employee benefits were paid vacation, housing, and healthcare insurance. Consistent with results for compensation on dairy farms in the Northeast (Fogleman, 1999), farms with larger herd sizes provided higher wages and more benefits compared to farms with smaller herd sizes. Employees in two cases with larger herd sizes reported to be satisfied with their compensation packages compared to those in smaller farms. For example, a non-supervisory employee in one smaller farm reported that he

earned \$8.30 per hour while alternative employment opportunities on other farms paid their employees with similar work experience \$10 per hour. Two non-supervisory employees on this farm said that they had to work for an average of 60 to 70 hours per week to be able to get a paycheck of more than \$1000 after every two weeks. The compensation package across the six cases was not uniform and each farm had its own unique combination of wages and benefits.

4.3.5 Costly Mistakes by Employees

Managers and herdsman were asked to discuss the mistakes made by their employees that affected the bottom line of their enterprises. Managers and herdsman in three cases reported that the most serious mistake employees made was failing to connect the milking machines to the milk tank resulting in all the milk going to the drain. The herdsman in one of those cases estimated the value of the lost milk to be about \$2,500 to \$3,000.

Contaminating standard milk with milk from cows treated with antibiotics is another mistake cited in one case. The manager of this farm reported that sometimes employees working in the milking parlor contaminate standard milk with milk from cows treated with antibiotics. The herdsman estimated that about 20,000 pounds of milk are lost when this happens.

Employees hitting and breaking the legs of cows while driving the skid loaders is yet another mistake cited in two cases. The manager of another farm that reported several cows were designated for slaughter but an employee mistakably released a cow not

designated for slaughter. Another employee on the same farm broke down the fence posts in three different incidents while driving the skid loader.

The case study results indicate that the reaction of employees when they make mistake depend on their expectation of how the managers are going to react or treat them. Non-supervisory employees either admitted or failed to admit their mistakes. Non-supervisory employees in three cases admitted to their herdsman or managers when they made mistakes because they were not penalized for the mistakes. For example, the employee who released a wrong cow for slaughter admitted his mistake to the manager and no disciplinary action was taken against him. Employees on another farm used team approach to solve any mistakes made by their coworkers. For instance, to avoid repeating the mistake of milk wastage by not channeling milk into the milk tank, milkers ensured that one of them would keep monitoring that the milking machine is well connected to the milk tank while others where milking. Employees in another farm reported that they admitted their mistakes because the manager did not yell at them or threatened to terminate their employment. Employees on one farm did not admit their mistakes because they would be penalized for the loss caused by the mistake. The manager's policy was to terminate the services of an employee who repeating the same mistake more than three times.

Managers reacted in different ways when their employees' made costly mistakes. The manager of one farm reported that he would try to improve communication between him and his employees so that they are not afraid to admit their mistakes. Close supervision of employees was used on another farm to minimize chances of employees

making costly mistakes. The manager of yet another farm threatened that he would penalize employees who made costly mistakes and the mistakes were never repeated.

The manager of the non-supervisory employee who broke down the fence while driving the skid loader reported that he never allowed the employee to drive the skid loader again for nine months. An employee that broke the leg of a cow with the skid loader on another farm was suspended from duties for one week. He never repeated the mistake again. An employee on yet another farm did not receive pay increase at the end of the year for failing to connect the milking machine to the milk tank.

A non-supervisory employee on one farm reported that coworkers made mistakes because they did not understand why things are supposed to be done in a certain way. In such situations, the manager or herdsman took time to explain to the employees the reason why tasks were supposed to be done following the standard operation procedures. For example, one employee did not post-dip the teats of cows and the herdsman had to explain to him the reasons for post-dipping. A herdsman in another case reported that an employee who repeats a mistake twice is retrained and an employee who repeats the mistake after retraining is assigned different responsibilities. The manager of this farm reported that he takes the blame when employees make mistakes because part of his responsibilities is to develop systems that prevent employees from making mistakes.

4.4 Termination and Turnover

Michigan is an employment at-will state. The employment at-will doctrine provides that either the employer or employee can terminate their employment relationship at any time without any reasons or justification. The study focused on the

reasons why managers terminated the services of employees and whether employees were aware of the factors that might lead to their termination. The study also focused on the reasons for employees terminating themselves, i.e., voluntary turnover. Finally, employees were asked to discuss the reasons that might lead them to accept alternative employment offers. The results from those questions are reported in the following sections.

4.4.1 *Termination of Employees*

Except for one case where termination was frequent, respondents in this study reported that employee termination was seldom. The manager of one case reported to have terminated only two employees in the past seven years. Another manager said he had terminated only one employee in twenty years. In yet another case with a larger herd size, termination was rare because the general manager required the herdsman to provide evidence of why an employee should be terminated and checked the performance evaluation record of the employee before making the termination decision. Incompetent employees were given a chance to improve their performance by being allowed to do different tasks and work with different groups until they identified jobs they are competent doing and a group they are compatible working with. Table 4.9 summarizes the reasons why employees were terminated and factors that may lead to termination across the six cases.

Poor working relationship with coworkers, insubordination, and fighting at the workplace were each cited in three different cases as the main reasons for terminating the services of employees. A non-supervisory employee on one farm was terminated for

refusing to do assigned tasks according to his herdsman's instructions despite the issue of "plenty of warnings." A non-supervisory employee on another farm was terminated for persistently refusing to follow the milking routines as prescribed by the herdsman. An alcoholic employee on yet another farm was terminated for refusing to participate in a rehabilitation program for alcoholics recommended by the employer.

Table 4.9 Causes for Employee Termination

	CASE A	CASE B	CASE C	CASE D	CASE E	CASE F
<i>Reasons why employee(s) were terminated:</i>						
○ Alcohol abuse	✓					
○ Antagonizing coworkers	✓					
○ Free riding on duties	✓		✓			
○ Not being a team player	✓	✓	✓			
○ Insubordination		✓			✓	✓
○ Persistent tardiness		✓			✓	
○ Fighting in the workplace			✓		✓	✓
○ Deliberately injuring cows			✓			
○ Not meeting performance target				✓		
<i>Factors that would lead to termination:</i>						
○ Fighting in the workplace	✓			✓	✓	✓
○ Sexual harassment	✓			✓		
○ Alcohol abuse			✓	✓		
○ Persistent tardiness			✓		✓	
○ Not being a team player	✓		✓			
○ Threatening coworkers					✓	
○ Negligence of safety precautions					✓	

Employees in three cases were terminated for not being team players and therefore not compatible working with other employees. For instance, one manager reported that "teamwork is very important in executing tasks" and an employee who did

not fit in any team was terminated. The manager reported that he gave the employees the opportunity to work with different teams to determine the team they were compatible working with before terminating their services. The managers worked in consultation with his herdsman before terminating the services of an employee.

Other reasons for termination included failure to meet performance targets and deliberately injuring cows. The herdsman of one farm reported that the manager terminated the services of an employee for injuring cows. The employee did not like milking cows because he did not want to risk being kicked and endure the long hours involved in milking. The employee scalded the udder of several other cows by spraying them with hot water after being kicked by a cow. The manager of another farm said he terminated the services of an employee who was responsible for calf rearing and milking in one shift. The employee had been employed on the farm for three years and sponsored to attend two training programs on calf rearing. Despite this training, the farm experienced a high calf mortality rate resulting in the termination of the employee's services. The manager mentioned that he terminated the employee for failure to detect the root cause of the high mortality rates.

Peer pressure rather than the managers terminating the services of employees was used to compel employees to leave employment on two farms. The manager of one farm reported that Hispanic employees used peer pressure to compel one of their coworkers they did not want to work with to quit employment. The employees also looked for and recommended a different Hispanic employee to replace the individual who left.

Hispanic employees on the other farm compelled the manager to terminate an employee they did not get along with. For example, the manager terminated the services

of an employee he described as very talented despite his lack of formal education. The employee could spot problems with cows that the other employees could not. However, the employee was a drunkard and was jailed twice for drunk driving. The manager rehired him after his release from jail in both two occasions. The employee was terminated for alcohol abuse at the workplace, antagonizing of other employees and free riding.

Respondents outlined factors that would result the termination of employees on their farms. Fighting in the workplace was the most probable cause for termination mentioned in four cases. Sexual harassment, alcohol abuse, incompatibility working with coworkers and persistent tardiness were each cited as probable causes for termination in two different cases. Negligence of safety precautions that might result in fatal accidents was cited in one case as a cause for termination and threatening of bodily harm to other employees was cited as a cause for termination in another case.

4.4.2 *Voluntary Turnover*

Except for one case where voluntary turnover was reported to be high, managers and herdsmen in the other five cases reported to have low voluntary turnover. One herdsman attributed low voluntary turnover to the fact that his manager worked closely with employees and assigned them responsibilities according to their abilities and preferences for doing different tasks. The non-supervisory employee on this farm attributed low turnover to the fact that the manager never overworked his employees. The manager of another case attributed low turnover to the competitive compensation package and training opportunities provided to employees.

Long working hours and monotony of work involved in milking were cited as the main causes for voluntary turnover on two farms with larger herds. One manager reported that his farm lost about three employees annually due to voluntary turnover. Non-supervisory employees in two other cases left employment due to the poor compensation package. Employees in one of those cases also left employment because of a poor working relationship with coworkers as well as intimidation and lack of positive feedback from their managers. The herdsman of this farm said that his managers did not work closely with employees nor did they provide positive feedback on performance. Hence, there was low work morale among employees. A non-supervisory employee on this farm reported that voluntary turnover was high because one of the managers intimidated employees by telling them they can be replaced anytime with other job seekers. The employee further said that they lacked a team approach in coordinating different work activities and employees often worked independently with little consultation amongst them. Those results imply that managers who emphasize communication with their employees may increase employee retention.

Managers used different approaches to manage voluntary turnover. A manager in one case reduced voluntary turnover by introducing job rotations, flexible working schedules, providing a competitive compensation package, and encouraging teamwork among employees. The manager in another case reduced voluntary turnover by improving communication with employees, letting employees know their position in the vision and goals of the farm, and encouraging teamwork among employees. The manager in yet another case offered competitive compensation and training opportunities to employees. Another manager focused on maintaining good working relationships with

employees. Cultivating good working relationships in the workplace was the main approach being emphasized to reduce turnover in three cases.

Voluntary turnover can hurt the overall productivity of a farm and cause stress to the remaining employees. One non-supervisory employee reported to have worked under pressure to complete all the tasks when two of his coworkers left employment simultaneously. Another non-supervisory employee from a different farm reported that two employees voluntarily left employment after he had been employed for two months. He had to cover their work and train another employee on how to do the work.

Managers in three cases reported that their worst-case scenario in employee management was losing their employees due to voluntary turnover. One manager said that his worst-case scenario was waking up one morning to find no employees to milk the cows. Another manager said that his worst-case scenario was losing his Hispanic employees after an immigration raid by the Department of Homeland Security. A manager in yet another case said that his worst-case scenario was losing his key employees that he had invested a lot in training due to voluntary turnover. He reported that that it was difficult to find qualified employees and the costs of training a new employee were high.

4.4.3 Accepting Alternative Employment

Respondents were asked to discuss what reasons would make them accept alternative employment offers. Non-supervisory employees in three cases reported higher pay as the main factor that would make to them accept alternative employment. Employees in two of those cases also said they would take alternative employment if they

did not get pay increases over time that was commensurate with their experience and skills. A non-supervisory employee in one of those cases would take an alternative employment offer that is related to his professional background in mechanical engineering. His ideal alternative employment would be to work for an automobile company. Two employees mentioned that they would accept alternative employment that provided flexible working hours. One of those employees explained that he did not have enough time to spend with his family because his work schedule was not flexible. Another employee from one of the farms with smaller herds reported that poor working relationships with coworkers would make him accept an alternative employment offer. Another employee from one of the farms with larger herds reported that he would not accept an alternative employment offer because he was well compensated and had good working relationships with coworkers and the herdsman.

Similarly, herdsman in three cases reported that they would take alternative employment offers that provided higher wages. Two of the three herdsman worked on farms where the non-supervisory employees had made similar comments. One of those herdsman and another herdsman from a different farm said they would accept alternative employment if they did not get pay increases commensurate with their skills and experience. Another herdsman said he would take a job that provide higher pay and allowed him to have weekend offs. This herdsman and another herdsman from a different farm would accept alternative employment if they were not assured of job security in their current employment. One of those herdsman would accept an alternative employment offer if his family relocated to a different geographic region.

Two herdsmen and three non-supervisory employees would accept alternative employment for higher pay while herdsmen and non-supervisory employees on two farms would accept alternative employment for lack of pay increases commensurate with their skills and experience. Both herdsmen and non-supervisory employee in one case would accept alternative employment with flexible working hours. Those results are consistent with findings from Billikopf (1984) that low wages and poor benefits packages were the main reasons for employees leaving dairy farm employment in California.

Herdsmen also spoke of the reasons why they would not accept alternative employment offers. Two herdsmen stated that their working relationship with coworkers and managers was the main reasons why they would not accept alternative employment. One of those herdsmen said the working relationship between him and his employer was more important than a higher paying alternative employment where he would not have such a good working relationship with the employer. He reported to have turned down several employment offers that provided higher compensation.

Two herdsmen mentioned family obligations as the main reason why they would not accept alternative employment offers. One of the herdsman said that he would not accept alternative employment offers because of the high cost of relocating his family. The other herdsman from a different case said that he would not accept alternative employment offers because his compensation was above what other farms paid their herdsmen. This was the highest paid herdsman across the six cases.

Herdsmen of three farms and two non-supervisory employees from those farms reported to be satisfied with their current employment. Two of those herdsmen said they want to hold their current employment until retirement. Although three herdsmen

mentioned higher pay as a reason why they would accept alternative employment offers, they reported that higher pay was not a major factor in deciding whether to accept alternative employment offers. One of the farms with largest herds provided better compensation and training opportunities relative to the other farms. The farm with the smallest herd provided the least training opportunities and compensation relative to other farms. Yet, employees of the farm with the smallest herd reported to be satisfied with their employment indicating that high compensation is not necessarily the major sources of employees' satisfaction with employment.

Fogleman (1999) found a positive correlation between employee compensation and satisfaction on larger dairy farms in the Northeast that provide higher compensation. She also found that dairy farm employees were satisfied with task identity - how they see the relevance of their work and how they play a role in the success or failure of the farms, task autonomy - a sense of ownership about one's work, and task variety (p. 65). This study found that employees on small farms performed multiple tasks unlike their counterparts on larger farms who specialized in specific tasks. This suggest that despite low compensation, employees on small farms can derive job satisfaction from task identify and task variety.

4.5 Case Wise Comparison and Outcomes

Parallels across the cases are that employee referrals and word of mouth are the main recruitment methods. Selection of new employees is based on their kinship and friendship ties with current employees. All cases provide new non-supervisory employees with on-the-job training regardless of their prior experience working on a dairy farm.

Paid vacation was the only benefit provided to all fulltime employees across the cases. Several other observations can be drawn from the cases.

- 1) Managers in one case did not disclose the mission and long-term goal of their dairy enterprise to employees. Consequently, the herdsman and non-supervisory employees were not able to enumerate their dairy management goals suggesting that having a mission statement, whether written or unwritten, is related to having specific and measurable goals. The farm provided high compensation and training opportunities to employees compared to four other cases but the employees reported that they would still take alternative employment that offered flexible working schedules. This suggests that besides high compensation and extensive training opportunities, employees appreciate having flexible working schedules that allow them to balance their work and social life. It also implies that single or isolated HRM practices like compensation and training are not sufficient for employee retention.
- 2) Two cases with written mission statements had explicit goals on dairy management. Three other cases did not have written mission statements but the managers were able to verbally state their mission statements. Herdsmen and non-supervisory employees in those cases had explicit goals on dairy management suggesting that having a written or unwritten mission statement is related to having explicit goals.
- 3) Three farms that had expansion as their long-term goal also had specific short-term goals geared towards achieving the expansion goal that employees strove to achieve. One case had the goal of expansion but did not have specific short-term

goals of how to achieve it. The herdsmen of the three cases with short term goals also had a clear idea of the role their employees played in achieving those goals and how those goals linked to achieving the expansion goal. This suggests that having specific and measurable short-term goals is important in linking the HRM practices to the overall long-term goal of the farm enterprise.

- 4) The manager of one aimed to reduce the operational costs of his farm and to keep it financially solvent. He provided low pay and fewer benefits and training opportunities to his employees compared to other cases. Consequently, employees on this case committed more costly mistakes compared to other cases. On the contrary, one of the two cases that provided higher compensation and training opportunities did not report any costly mistakes by employees. This suggests that there is a trade-off between keeping the operational costs low and investing in training employees and providing competitive compensation. Exposing employees to different training opportunities and higher pay minimizes the occurrence of costly mistakes.
- 5) The manager of the case that provided the lowest pay and fewer benefits and training opportunities compared to other cases maintained close working relationships with employees. Despite the high incidence of costly mistakes, the manager did not penalize employees for the mistakes. Turnover and terminations were low compared to other cases. This implies that close working relationships among employees and their managers are important for employee retention.
- 6) One case where the manager mainly recruited walk-ins instead of recruiting through employee referrals had high turnover and more terminations compared to

other cases. Employees on this farm left employment voluntarily due to poor working relationships among coworkers and lack of positive feedback from the management. Employees were terminated for persistent tardiness and insubordination. Compared to other cases, this suggests that recruiting through employee referrals is associated with having employees who are compatible working together in teams and, therefore, high employee retention.

- 7) The two larger cases with the most training opportunities also provided more benefits and higher wages compared to other cases suggesting that they were concerned about retaining employees. However, unlike other cases, those two cases occasionally experienced voluntary turnover among milkers due to monotony of work and long working hours involved in milking. Milkers in the two cases specialized only in milking following strict routines. Voluntary turnover due to monotony of work was not reported in other cases that did not have specialized job designs. This suggests that task variety is important in employee retention besides high compensation and more training programs.

CHAPTER FIVE

DISCUSSION

Based on the results from the six case studies and drawing insights from the resources-based theory (RBT), this chapter examines the implications of HRM practices and human resources in achieving competitive advantage. Following Wright et al. (1994) and Barney and Wright (1998) human resources, here, include all the knowledge, experience, skills and commitment of farm employees and their relationships with each other and with those outside the farm. HRM practices refer to tools used to manage the human resources such as recruitment, selection, training, and compensation (Wright et al., 2001: 703).

Specifically, the chapter focuses on illuminating whether the HRM practices contribute to making human resources on dairy farms valuable, rare, imperfectly imitable, and non-substitutable. Imitation barriers like social complexity, causal ambiguity, and path dependency are also identified. Table 5.1 provides a summary of the identified potential sources of competitive advantage based on their contribution to rareness, value, inimitability, and non-substitutability. Factors that lead to human resources being heterogeneous and immobile are also discussed.

5.1 Mission Statement and Farm Goals

The fundamental purpose of the RBT is to explain how a firm can deploy its internal resources to implement its business strategy. The mission statement defines the strategic intent of the firm and the operational goals stipulate how the firm expects to

achieve its mission. To achieve competitive advantage, the mission statement and operational goals provide a road map to dairy farm managers on how to deploy, develop, and manage their human resources. Results from the case studies indicate that two cases had written mission statements. Three other cases did not have written mission statements but the respondents could verbally define the future direction of their farm enterprises. The managers on the two dairies with written mission statements communicated the missions of their enterprises to their herdsmen who strove to attain the operational goals. Five managers were satisfied with their employees' productivity and the financial performance of their enterprises. Deducing from the stated mission statements, the main focus of four cases was expansion while the main focus of two other cases was maintaining current farm sizes.

According to Bart and Baetz (1998: 827), a mission statement is viewed as important for the long-term survival of an enterprise. Two principle benefits in support of mission statements are 1) better staff motivation and management control, and 2) a more focused allocation and utilization of organizational resources. Lado and Wilson (1994), referencing several authors, notes that an enterprise with a well-articulated mission statement will potentially achieve sustained competitive advantage over those that lack such statements. This discussion suggests the research propositions (RP) that:

RP₁: Having a formal mission statement is a prerequisite in achieving sustained competitive advantage through employees. Dairy farms can achieve competitive advantage by having a mission statement that guides the deployment, development, and utilization of human resources.

RP₂: *Communicating the mission and goals of the dairy enterprise to employees is a prerequisite in achieving sustained competitive advantage through employees.*

Business goals are targets that organizations strive to achieve as a means of realizing their missions. Goals are also quantitative yardsticks by which a firm's strategic options and alternatives are judged. Results from the case studies indicate that five farms had dairy management goals that are measurable and specific. Empirical studies have indicated that there is a positive relationship between the existence of organizational goals and performance (Brown and Latham, 2000; Weldon and Yun, 2000). Team goals are also positively related to team performance in achieving the strategic goals of an enterprise (McComb et al., 1999) and existence of goals has been found to positively influence employee commitment (Wright et al., 1993). A considerable body of research exists which demonstrates the positive impact of the existence of goals on team performance too (Bart and Baetz, 1998: 829). Thus, the discussion supports the propositions that:

RP₃: *Having formal goals that specify the desired outcomes in accomplishing the dairy farm's mission is a prerequisite in achieving sustained competitive advantage through employees.*

RP₄: *Linking the HRM practices to the mission and goals of the dairy farm is a prerequisite for achieving sustained competitive advantage through employees.*

Table 5.1 Potential Sources of Competitive Advantage in the Six Cases

Valuable	Rare	Inimitable	Non Substitutable
<ul style="list-style-type: none"> ▪ Employees achieve goals that bring revenue to the farms. ▪ Employers provide incentives and bonuses for achieving goals. ▪ Employees avoid mistakes that affect the farm’s bottom line. ▪ Employers reduce operational costs by cutting down expenditure on labor. ▪ Employers recruit through their employees provide valuable information about job candidates. ▪ Employers invest in training employees to acquire specialized knowledge and skills. ▪ Current employees train new employees at no cost to the farm. 	<ul style="list-style-type: none"> ▪ Not all job seekers have requisite skills to work on dairy farm. ▪ Employers hire selectively. ▪ Some employees have specialized knowledge such as the veterinarians and nutritionists. ▪ Variance in individual performance at work. ▪ Most employers prefer hiring Hispanic to American employees. ▪ Employers retain their productive employees even then there are reasons to terminate them. 	<p><i>Social Complexity</i></p> <ul style="list-style-type: none"> ▪ External social networks used by employees to recruit. ▪ Interpersonal relationships among coworkers based on kinship and friendship ties. E.g., peer pressure. ▪ High performance due to teamwork production. ▪ Trust based relationships between managers and employees developed over time. <p><i>Causal Ambiguity</i></p> <ul style="list-style-type: none"> ▪ Causes for employee satisfaction. ▪ Superior performance emanating from teamwork. <p><i>Path Dependency</i></p> <ul style="list-style-type: none"> ▪ Organizational culture-values, norms and beliefs. ▪ Work routines that are farm specific, e.g. milking. ▪ Resource accumulation. E.g., tacit knowledge and skills in employees that results from cumulative learning. 	<ul style="list-style-type: none"> ▪ Unique workplace relationships based on kinship and friendship ties that lead to increased performance. ▪ Organizational culture on the farms that is path dependent. ▪ Capital cannot replace human resources completely.

5.2 Farm Employees as a Valuable Resource

Managers of dairy farms can create value by either decreasing their operational costs or increasing revenue by producing quality milk that attracts a premium price. Five out of six cases had producing quality milk as one of their explicit goals. Employees played an important role in achieving this goal by taking measures to ensure that the somatic cell count in milk was low. This was achieved in three cases by adhering to the standard operational procedures when milking. Employees also facilitated the creation of value by striving to achieve other goals such as heat detection, successful insemination, and calf rearing to reduce calf mortality rate.

Managers recognized the importance of employees in creating value by providing incentives to motivate them to achieve those goals. In one case, for example, each employee received a bonus of \$50 at the end of the month if there was no death loss of calves. Another case provided employees with bonuses worth 3% of their annual wages at the end of the year when it realized positive net returns. Use of incentives enables the managers to align employees' efforts to achieve the farms goals and missions. This discussion suggests the propositions that:

RP₅: *Specific and measurable goals on dairy management practices are important yardsticks that managers use to assess their employees' contribution to increasing the value of their farms.*

RP₆: *Managers provide incentives to motivate employees achieve goals that create more value to their farm enterprises.*

Two cases with smaller herds had reducing operational costs as part of their goals. Managers in those cases maintained low operational costs by reducing their labor

expenses. Managers in both cases put a limit on the hours each employee can work per week. Likewise, employees in all six cases were allowed to work overtime but at the normal wage rate. A comparison of farms with larger herds versus smaller herds indicates that larger farms spend about 30% of their total revenue on labor cost while smaller farms spend only 16%. Smaller farms had higher total revenue per employee compared to larger farms. They also had lower total expenditure per employee compared to larger farms. On average, employees on smaller farms milked 9 more cows compared to employees on larger farms. This suggests that farms with smaller herds create value by maintaining low labor costs and utilize their employees more efficiently.

These results are contrary to previous studies findings that larger farms in the dairy industry are more labor efficient than smaller farms (Hardley et al., 2002; Bewley et al., 2001). A possible explanation for these results is that dairy farms demand more skilled and specialized labor as they expand and become more mechanized (Reed, 1994). Finding skilled fulltime employees becomes a management challenge after expansion because of increased competition for skilled labor. Consequently, compared to smaller farms, larger farms have to offer earning premiums to attract and retain skilled labor. This skilled labor comes from a pool of American employees (63%) who are likely to demand higher pay and more benefits compared to the Hispanic employees (56%) working on smaller farms. This discussion suggests the proposition that:

RP₇: Farms with smaller herds create value by having lower labor costs and generating higher revenue per employee compared to farms with larger herds.

Employee referrals and word of mouth are the most common recruitment methods in all six cases. Hiring directly from the external labor market poses the risk of adverse selection because the knowledge, abilities and skills of a potential employee are not observable when managers are hiring. This is because potential employees (informed party) have relevant information about their job-related skills, knowledge and abilities that the hiring managers (uninformed party) do not have.

Due to low wage rates in agriculture (Findeis et al., 2002: 1), the labor market is likely to have low quality workers as high quality workers might be reluctant to change jobs leading to a “market for lemons” problem (Akerlof, 1970). For example, the two cases that provided more training opportunities to employees also provided higher wages and more benefits to retain those employees and, therefore, reduce the chance of other farms hiring them. Because of the problem of adverse selection in hiring, managers might prefer to either offer low entry-level wages or hire from a pool of job seekers that they can get information about their work ethics. This may explain why dairy farm managers recruit through employee referrals and word of mouth instead of directly from the labor market. Current employees who recommend job seekers for employment provide the scarce information about the individuals’ work ethics. Employees, therefore, create value to the farms by providing important information that enables managers to overcome the problem of adverse selection and hiring low quality employees. Employee referrals also reduce the cost of recruiting through advertisement or through farm labor contactors, hence reduction in operational costs. In addition, managers use their incumbent Hispanic employees to recruit other potential Hispanic employees to overcome the language

barrier in communication. Potential Hispanic employees are unlikely to be able to speak sufficient English and neither can most managers communicate in Spanish.

RP₈: Dairy farm managers mainly recruit through employee referrals to overcome the problem of adverse selection.

Employees create value by avoiding mistakes that affect the bottom line of their employers' farm enterprises. For example, it was reported in three cases that employees failed to connect the milking machine to the milk tank leading to milk losses. The value of the milk in one case was estimated to be between \$2,500 and \$3,000. Employees in another case mixed standard milk with milk from cows treated with antibiotics and the herdsman estimated a total loss of 20,000 pounds of milk. Employees create value for their farms by avoiding such costly mistakes.

Dairy farm managers have to decide whether to develop their employees' competencies by training them internally or by hiring employees who have already acquired the requisite training in the labor market. Results from all six cases indicate that managers invest in developing the competencies of their non-supervisory employees. However, they hire herdsmen with college degrees in dairy science or extensive experience in dairy management. Training and development potentially enhances the productive capacity of non-supervisory employees making them more valuable to the farms. To evaluate the benefit of training employees, one case that provided extensive training to employees did not report any incidence costly mistakes by employees. Another case that did not provide extensive training to employees reported a high incidence of costly mistakes by employees. This suggests the proposition that:

RP₉: *Farms that expose their employees to different training programs will report fewer costly mistakes by employees compared to farms that do not.*

In all six cases, newly hired employees were trained on how to perform different tasks related to their jobs by working alongside incumbent experienced employees. Incumbent employees, therefore, create value to their farms through training newly hired employees by passing on their knowledge about the farm's routines and culture. Table 5.1, column one, provides a summary of what makes employees on the six dairy farms a valuable resource.

5.3 Farm Employees as a Rare Resource

The RBT posits that a resource must be rare to be a source of competitive advantage. This brings to question whether human resources on dairy farms are a rare resource. Given the high unemployment rate in Michigan since 1998 (Michigan labor market statistics, 1970-2002) and the excess supply of job seekers in the labor market, one can argue that the dairy farm employees are not a rare resources. However, four arguments can be used to counteract this argument.

First, job seekers in the labor market do not have homogeneous knowledge, abilities, and skills. Despite the large pool of job seekers in the labor market, dairy farm managers have reported difficulty in recruiting employees with requisite skills and knowledge (Hadley, 2002; Maloney, 2002). Therefore, managers hire semi-skilled individuals and invest in training to equip them with farm specific knowledge and skills that make the employees a rare resource. Employees, with training and experience,

become the repository of the farms' knowledge and skills and therefore valuable and rare resources.

Second, managers in five cases practiced selective hiring to ensure that only individuals who are expected to be compatible working with current employees and have the aptitude to learn and work on a dairy farm were hired. In one case, for example, the herdsman reported to ask potential American employees whether they were willing to work with Hispanic employees. In another case, an employee who did not like working with cows was terminated for inflicting injury on cows. An employee in yet another case preferred feeding the herds to milking because of the long hours involved in milking. One manager said that Americans perceived working on a dairy farm as a strenuous job and instead preferred being employed in fast food restaurants. Those examples suggest that productive employees who like working on a dairy farm are a rare resource.

Third, the case studies indicate that dairy farms have jobs that allow for variance in individual performance. Some individuals are more productive as measured by their output compared to others and there is evidence that managers retain productive employees even when they have reasons to terminate their services. For example, the manager of one case rehired a Hispanic employee who had been under arrest on two different occasions. Unlike other employees, this employee was gifted in identifying sick cows indicating that certain talents are rare among employees.

Last, dairy farms are increasingly becoming dependent on immigrant labor. Hispanic employees comprised 49% of the total workforce in the six cases. Managers who had made the transition from employing American employees to Hispanic employees did not want to revert to hiring American employees. One manager reported

that seven Hispanic employees could accomplish the same workload that was done by thirteen American employees. Two other managers reported that Hispanic employees were dependable and loyal. The above evidence supports the notion that skilled and knowledgeable employees who like doing dairy farm chores are a rare resource. The last argument suggests the proposition that:

RP₁₀: *Dairy farm managers will report difficulty in finding productive, skilled, and experienced employees who like doing dairy farm chores.*

Table 5.1, column two, provides a summary of indicators that employees are rare resources for the dairy enterprises.

5.4 HR System as Imperfectly Imitable

The RBT holds a resource is a source of competitive parity and not advantage if the resources or its benefits can be imitated by competitors (Barney and Wright, 1998: 34). Inimitability arises through three main isolation mechanisms: social complexity, causal ambiguity and path dependency (Barney 1991; Lado and Wilson, 1994). Table 5.1, column three, provides a summary of factors that lead human resources and human resource system to be imperfectly imitable.

5.4.1 Social Complexity

Managers in five cases mainly recruited new employees through employee referrals. This suggests that dairies with employees who have external social networks to recruit workers with strong work ethics will have a competitive advantage over those that have no access to such networks. For example, an employee in one case reported that

most of his coworkers come from the same geographical area in Mexico where they grew up together. The herdsman of another case reported that incumbent employees with strong work ethics often use their social networks to recruit potential employees with similar work ethics. The external social networks of employees in each case are potential sources of social complexity. Hence, external social networks for recruiting can be a potential source of competitive advantage or disadvantage depending on whether incumbent employees recruit potential employees with strong work ethics or not.

Managers in five cases engaged in selective hiring. Selection of herdsmen is mainly based on their prior working experience and knowledge of dairy management acquired through education. Selection of non-supervisory employees is mainly based on their kinship and friendship ties with incumbent employees and prior working experience. Managers also look for employees' willingness to work for long hours and to learn on the job.

Managers select and hire non-supervisory employees based on their kinship and friendship ties with current employees because they want to staff their farms with employees who are compatible working together. From the RBT's perspective (McGrath et al., 1995), managers hire related employees because when a team of new employees is formed, there is likely to be considerable confusion with respect to who is supposed to do what, what information will be required for each person to perform their tasks, what are their appropriate roles, and so forth. This confusion arises because employees lack knowledge about each other's aptitudes, motivation, and level of commitment. Such a team lacks the history of repetitive interactions that render them predictable to one another and aids in the development of trust (p. 257). Therefore, time and effort that

could be used to perform dairy farm tasks will be directed to developing patterns of relationships and building trust.

On the contrary, it is potentially easier to achieve teamwork among employees who have prior acquaintance and belong to the same social groups. For example, turnover and termination were reported to be low in five cases where selection was based on kinship and friendship ties. On the other hand, turnover and termination was reported to be high in the case where the manager hired walk-ins who have no ties with incumbent employees. Employees in this case reported that poor working relationships among coworkers were a major cause for voluntary turnover. Hiring employees with kinship and friendship ties with each other potentially makes them compatible working together in groups. Kinship and friendship ties are sources of social complexity that cannot be easily imitated. Thus, the discussion suggests the following proposition:

RP₁₁: Dairy farm managers select new employees based on their kinship or friendship ties with current employees because such employees are likely to be compatible working together as a team.

Employees are the repository of a farm's knowledge and skills and managing turnover is an important component in achieving competitive advantage. Unlike tangible assets, dairy farm managers cannot own their employees because they are free to quit at will. The risk of voluntary turnover is a management challenge because managers may lose their valuable and rare human resources. Turnover increases the risk of not having enough labor to perform critical production tasks like milking and feeding the cows. For example, managers in three cases reported that their worst-case scenario is losing their employees due to voluntary turnover.

Human capital theory suggests that general skills are traded in competitive labor markets and turnover is high among employees with general skills (Coff, 1997: 377). As the theory suggests, turnover seems to be higher among non-supervisory employees with general skills than among herdsmen with specialized skills. The herdsmen with college degrees in animal science in three cases were not willing to accept alternative employment offers. Voluntary turnover in all six cases was reported only among non-supervisory employees.

In two cases, Hispanic employees who had strong kinship and friendship ties used peer pressure to compel their coworkers who are not able to meet performance expectations or who did not fit into their working culture to quit. The employees also looked for a replacement of the employee who quits. This suggests that managers of dairies with employees who regulate each other's behavior and ensure conformity to group norms are unlikely to terminate employees. In contrast, a manager of a farm without a peer pressure system, as was the case on one farm, is more likely to terminate employees.

Two herdsmen reported that they would not accept alternative employment offers because of their interpersonal working relationship with their managers. Three managers reported that they foster good interpersonal working relationships among their employees to manage voluntary turnover. Thus, the interpersonal relationship among employees and between employees and managers is a potential source of social complexity. This suggests the proposition that:

RP₁₂: *Dairy farms managers who report to have close working relationships with their employees will also report high employee retention compared to managers who have no close working relationship with their employees.*

5.4.2 Causal Ambiguity

Causal ambiguity may arise from the inability of one farm to identify and imitate the source of competitive advantage on another farm. For example, one case with the largest herd size provided higher wages, more benefits, and training opportunities to employees compared to the case with the smallest herd size. Yet, employees in both farms reported to be satisfied with their current employment. Another larger case provided competitive compensation and different training opportunities to employees. However, in this latter case, employees were not satisfied with their current employment and would accept alternative employment offers. It is unclear from the three cases whether employee satisfaction is as a result of higher compensation, more training opportunities, or the interpersonal working relationships with managers and coworkers. Employee satisfaction is therefore a source of causal ambiguity and a potential source of competitive advantage. This observation suggests the proposition that:

RP₁₃: *Dairy farms managers do not know whether the main source of their employees' job satisfaction emanates from high compensation, extensive training opportunities, or their interpersonal working relationships with employees.*

The entry-level wage rates for the six cases were above the mandated minimum. However, the rates varied across the cases suggesting that each case determines its

compensation structure. Wages and salaries paid to current employees in a given position depend not only on the characteristics of the employees such as educational qualifications, job-related skills, and tenures in current employment, but also on the herd size of the farm. The wage rate of herdsmen on larger farms ranged from \$14 to \$20 per hour while that of smaller farms ranged from \$12 to \$14. However, the wage rate of each employee was kept confidential between the manager and the employee. Herdsmen in all cases did not know the wage rate of each subordinate employee on their farms.

Larger farms also provided more benefits compared to smaller farms. However, there is variation in benefits provided even within one case. For example, an employee in one case that provided retirement plans to employees with long tenure accepted the plan. Another employee in the same case preferred to have wage increments instead of the retirement plan. Another case provided healthcare insurance to non-supervisory employees but one employee preferred to receive a cash payment instead. This variation in the compensation system within and between cases is a source of causal ambiguity arising from asymmetric information. This discussion suggests the proposition that:

RP₁₄: Larger dairy farms provide higher wages and more benefits compared to smaller dairy farms. However, the wages and benefits provided to employees in the same job group are not uniform even within a single farm.

Milking is done in shifts and employees work in teams. When employees are able to achieve the set operational goals like low somatic cell count or increased milk production, it is not possible to determine or separate the contribution of each individual in the team. Therefore, high productivity arising from teamwork production is a potential

source of causal ambiguity because it is not easy to relate superior performance to an individual's effort. The manager cannot isolate and reward the individual nor can the competitors hire out the individual responsible for the high performance.

5.4.3 *Path Dependency*

The route that the farm has taken in the past to get where it is now influences its ability to achieve competitive advantage through its human resources system. Six cases, for example, were family businesses and one of the cases was a family corporation. One manager mentioned that the organization culture on his farm emanated from the family values and beliefs of the farm owners. Family employees trusted each other and subsequently trusted their hired employees. The manager also said that he had a build trusting relationships with his supervisory personnel such that he did not expect them or the subordinate employees they supervised to commit costly mistakes. Supervisory personnel in two other cases reported they would not take alternative employment offers because they had close and trusting interpersonal relationships with their managers. Such relationships were not guaranteed in alternative employment offers.

Wilson and Kennedy (1999: 182) argue that the culture of an organization is determined by the values and beliefs of employees and the employer. Trusting relationships vary within and across firms because of diversity in people. Trustworthiness as a productive asset in an organization is developed over time (p. 185) and investing in trust-based relationships produce advantages where trusting parties cannot take advantage of each other (i.e., opportunistic behavior) because of their repeated relationships (p. 191). Supervisory employees, for example, assume that they have job

security because of their job tenure and interpersonal relationships with managers. This suggests that the culture of trust among managers and employees depends on the way the managers have managed their employees in the past. Scholars who support the notion that trustworthiness is a source of competitive advantage include Dyer and Chu (2003) and Barney and Hansen (1994). This discussion support the proposition that:

RP₁₅: *Supervisory employees who perceive to have strong trusting relationship with their managers will have long tenure and be unwilling to accept alternative employment compared to those who perceive to have weak trusting relationship with their managers.*

Routines practiced on a particular farm are also path dependent. A farm that has been committed to particular standard operating procedures may find it difficult to adapt to new ways of performing the same tasks. Managers in three cases, for example, reported to have developed their own specific routines for milking. Routines that are specific to a given farm are a result of cumulative learning over time. It takes time for individuals to develop deeper understanding of specific tasks, duties, and responsibilities to become proficient (Lado and Wilson, 1994: 706). Koch and McGrath (1996: 340) notes that routines that result from cumulative benefits of training allow some firms to follow practices that give them unusual productivity that is not easy to imitate. This discussion supports the proposition that:

RP₁₆: *Dairy farms that require employees to strictly adhere to the milking routines that have been designed specifically for the farm will have low somatic cell counts in milk compared to farms that do not impose strict routines.*

The RBT provides that a firm's ability to expand is determined the resources it has accumulated over its history (Forcedell, 2001: 3). Four out of six cases had the long-term goals of expansion. Herdsman in two cases mentioned that expansion meant increasing the herd sizes of their farms. The expansion plan was to be achieved by keeping the herds healthy, improving the reproduction of cows, and reducing the calf mortality rates. Thus, increasing the herd sizes partly depended on having employees who are knowledgeable and skilled in dairy management. The accumulation of both resources, i.e., employees stock of knowledge and skills and herds, is path dependent. The potential of dairy farms to expand depends on the human resource competencies they have developed over time.

The manager of one case trained his supervisory personnel for future managerial roles. This manager, unlike managers in other cases, had acquired education in both dairy management and business administration. A combination of such knowledge and skills is developed over time through both formal and informal education such that managers in other cases cannot easily imitate the practice of training their supervisory personnel for high level managerial roles.

The difference in resource endowment (farm location, acres of land, farm layout and equipment, and herd size) is also path dependent. For example, two cases were located in proximity to high schools and, therefore, had the advantage of hiring students on part-time basis. The farm with the largest herd size was highly mechanized compared to the farm with smallest herd size that was labor intensive and most of the work was done manually. Difference in resource endowment influenced compensation in each case where larger farms tended to provide higher pay compared to smaller farms. For

example, a farm that milked about 3,000 cows per day generated more revenue and provided higher compensation compared to the farm that milked about 200 cows per day. The compensation structure across cases is therefore path dependent due to differences in resource endowment. This suggests the proposition that:

RP₁₇: The wage structure on dairy farms is positively correlated with the herd sizes. On average, dairy farms with larger herd sizes will provide higher pay compared to farms with smaller herd sizes.

5.5 HR System and Human Resources as Non-substitutable

Competitive advantage emanates from a combination of HRM practices, and competent and committed human resources, and strong leadership and organizational culture to effectively utilize the human resources. Wright et al (2001: 703) argues that isolated HRM practices cannot be a source of competitive advantage because competitors can easily imitate each practice. However, it is the integration of different HRM practices and human resources that results in a unique human resources system. Path dependency, socially complex relationships, and causal ambiguity all contribute to enable each farm develop a distinct human resource system that has no substitute. For example, the organizational culture and interpersonal work relationships that are based on kinship and friendship ties on each farm cannot be substituted. Therefore, the human resource system on each farm is not something that can be purchased from the labor market.

Employees on a dairy farm are also a non-substitutable resource. All six cases hired year round fulltime employees because dairy farming cannot be fully mechanized. Labor and capital are substitutes only to a degree. Human resources are still needed even

on a farm that is highly mechanized, for example, to wash the cow's udder and put the milking cluster to the cow's teats. Human resources are also needed to monitor the herds' health, provide necessary treatment, and assist a calving cow. Two managers, for example, wanted to expand their dairies by increasing the herd sizes and building new facilities but maintaining the same number of employees.

Unlike technology on a farm that can become obsolete, human resources that are constantly being educated and trained cannot become obsolete. There are no strategically equivalent resources in the factor market that can completely replace human resources on dairy farms. Capital may result in the reduction of the number of employees needed to work on a mechanized dairy farm compared to a non mechanized farm but cannot replace the need for human resources completely. Hence, human resources are a potential source of sustained competitive advantage because they are non-substitutable. This discussion support the proposition that:

RP₁₈: Managers who have modernized their facilities by becoming more mechanized hire, on average, at least the same number of employees as before they modernized their facilities. Hence, mechanization does not necessarily lead to reduction in demand for labor.

5.6 Immobility of the Human Resource System

Resources are immobile when they cannot be transferred easily from one farm to another. Immobility may arise out of social complexity, causal ambiguity, path dependency, or a combination of all those factors (Lado and Wilson 1994: 702). Those

factors make it difficult to imitate the competencies from one case to another and, therefore, also difficult to transfer from case to case.

In two cases, for example, non-supervisory employees with proven capabilities were promoted to supervisory or managerial positions. Hiring from the internal labor market enables the managers to overcome the problem of adverse selection in hiring supervisory personnel. Internal hiring also acts as an imitation barrier that inhibits the transfer of specific skills and knowledge developed on one farm to another. Managers also hire herdsmen with college degrees in dairy science because such competencies cannot be developed at the farm level. This discussion suggests the following propositions:

RP₁₉: *Dairy farm managers will recruit and hire herdsmen from their pool of non-supervisory employees to avoid the transfer of competencies developed on their farm to other farms.*

RP₂₀: *Dairy farm managers will hire individuals who have college degrees in dairy science because such individuals have competencies that cannot be developed on their farms.*

On-the-job training equips employees with farm specific knowledge and skills that may not be readily transferable to other dairies. For example, three farms trained their employees on specific milking routines that are not practiced by other dairies. Routines become the most important form of storage of a farm's specific knowledge and skills. Koch and McGrath (1996: 336) suggest that people carry out repetitive tasks by relying on procedures rather than conscience or memory. This means that they are not aware of and cannot articulate the nature of routines even if they are intensely involved in

carrying them out. Routines result in immobility of knowledge and skills because they are a result of cumulative experience and practice. Hence, those routines remain on the farms where they are developed and may become a source of competitive advantage.

Koch and McGrath (1996: 340) also comments from the RBT perspective that fundamental heterogeneity and routines that are specific to a firm do not allow an employee trained on one firm to be of equal use to another firm. This is because, as noted by Cohendet and Llerena (2001: 4), routines are based on the context where they emerge. Execution of a routine depends on the given context, i.e., the physical equipment and work environment that facilitates and nurtures collective action. Routines are a result of repeated interactions between individuals in an organization. The context of the information possessed by an individual is established by the information possessed by all other individuals in the organization. Hence, the relationships between individuals in an organization are important for the execution of routines. Knott (2003: 930) notes that skillful performance is achieved by observance of a set of rules that are not known as such to the person following them. Therefore, newly hired non-supervisory employees in all cases are trained on how to milk regardless of their prior experience elsewhere because the milking routines vary from farm to farm. The milking routines of one farm cannot be easily transferred to competing farms because of the social relationships involved in the development and enforcement of the set of rules that manage the routines. This discussion suggests that proposition that:

RP₂₁: *Milking routines vary from one dairy farm to another such that a milker trained on one farm needs retraining to be able to perform the routines of a different farm.*

Training also equips employees with specialized knowledge and skills that are specific to a particular farm. Knowledgeable and skilled employees have higher replacement costs because they provide services that cannot be provided by unskilled employees. Managers strive to retain those employees by providing job security, high compensation, and good interpersonal working relationships that lead to their immobility. Such employees may also find their specialized knowledge and skills not transferable to other farms. A non-supervisory employee in one case, for example, reported that he was highly trained on how to operate a technologically advanced milking machine. However, other dairies do not use that type of advanced milking technology and therefore his knowledge and skills are not in demand. Employees also remain in one employment because of the cost of searching for alternative employment and relocation. Employees in one case, for example, were not satisfied with their current employment but did not have time to search for alternative employment because of their rigid working schedules. One employee was not ready to take alternative employment because of the high cost of relocating his family. This discussion suggests the proposition that:

RP₂₂: Dairy farm employees who have families will be reluctant to accept alternative employment offers compared to their single counterparts because of the high cost involved in relocating their families.

Dairy farms differentiate themselves by their benefit packages. Three dairies, for example, provided healthcare insurance to all employees while two dairies provided healthcare insurance to supervisory employees only. All employees on one dairy did not have healthcare insurance. Among the three dairies that provided healthcare insurance to all employees, two dairies also provided retirement benefits to all their employees. One

of the two dairies that provided healthcare insurance to supervisory employees only also provided retirement benefits to the supervisory employees. The job tenure for non-supervisory employees in dairies that provided healthcare insurance and retirement benefits ranged from 6 to 12 years. The tenure of non-supervisory employees in dairies that did not provide healthcare insurance and retirement benefits ranged from 1 to 4 years. This suggests the proposition that:

RP₂₃: *Dairy farms that provide healthcare insurance and retirement benefits to all employees will have employees with longer job tenures compared to the farms that provide one or neither of those benefits.*

A firm has more direct influence on its employees' perception about their current jobs compared to alternative jobs (Coff, 1994: 384). Two herdsmen, for example, reported that they would not take alternative employment offers because of close interpersonal working relationships with their managers. The herdsmen were not sure whether they would have such working relationships in alternative employment offers. Two other herdsmen reported that they could not take alternative employment offers because their current employment provided job security that was not guaranteed in alternative employments.

In contrast, employees in another case reported that their manager threatens them with dismissal by letting them know they are replaceable with other job seekers. In such a situation, employees with no job security live with the fear of losing their job at any time while employers live with the fear of losing their employees without advance notice. Managers in three cases, for example, reported that their worst-case scenario in employee management was losing their productive employees without prior notice due to

voluntary turnover. Therefore, the mobility or immobility of human resources is influenced by the perception of employees about alternative employments and voluntary turnover. Farms that provide job security reduce the mobility of employees while those that do not enhance their mobility. This suggests the proposition that:

RP₂₄: Dairy farms that provide employees with job security will report low voluntary turnover compared to farms that do not provide job security.

5.8 Heterogeneous Demand and Supply of Human Resources

Individuals differ in their knowledge, skills, abilities, experience, and commitment. Three farms hired herdsmen with college degrees in dairy science as opposed to individuals with no knowledge on dairy management. Employees with prior experience working on a dairy farm were preferred to those with no experience. Likewise, hiring practices across cases indicated that employees are not equal in productivity. Managers in three cases reported that Hispanic employees were dependable and had strong work ethics compared to other employees.

Dairy farms also have different jobs that require different skills and knowledge. The manager of one case, for example, hired the services of two consultants, a nutritionist and a veterinarian, as part of his decision making team. Managers in other two cases used the services of nutritional consultants. Managers also hired individuals with different levels of skills and knowledge to perform different tasks. Some employees, for example, specialized in milking only while others specialized in herd feeding or calf rearing. A non-supervisory employee in one case desired to be trained on animal healthcare because he lacked the knowledge and was not allowed to administer medicine to the herd.

Employees' competencies are also not homogenous because of the differences in the training programs offered to employees across the six cases.

The skills and knowledge required to work on a dairy farm are different from those required to work on other types of farm enterprises such as greenhouses, nurseries, or landscape operations. Dairy farm managers are selective in their hiring practices because the labor market supplies individuals with different levels of knowledge, skills, and abilities. Therefore, as the RBT postulates, the six dairy farms face both heterogeneous demand for and supply of human resources. This discussion support the proposition that:

RP₂₅: *Managers of farms that practice job specialization are more selective in hiring compared to those that have no job specialization because of the great variation of knowledge, abilities, and skills on dairy management among job candidates.*

CHAPTER SIX
CONCLUSIONS AND RECOMMENDATIONS FOR PRACTICE AND FUTURE
RESEARCH

This study sought to describe the HRM practices on dairy farms in the state of Michigan and how those practices can be a potential source of competitive advantage. A qualitative case study design founded on the interpretive paradigm was used to gain a deeper understanding of the HRM practices and develop theoretical insights. The theoretical insights provide both researchers and dairy farm managers with a framework of thinking about how the human resource function can be effectively managed to attain competitive advantage.

The cases comprised of six dairy farms with varying herd sizes and number of employees. Data were collected from 7 managers, 6 herdsman, and 7 non-supervisory employees through in-depth interviews that were tape-recorded and later transcribed verbatim for analysis. Interviews were conducted on site and lasted for 45 minutes to 2 hours.

Unlike previous empirical studies that focused on distinct HRM practices like compensation or training, this study explored the integration of various HRM practices (recruitment, selection, training and development, and compensation) and their outcomes (costly mistakes by employees, termination, voluntary turnover, and reasons to accept alternative employment). The resource-based theory formed the theoretical framework to guide this study. The theory postulates that a firm's performance is a function of how well managers build their organization around resources that are valuable, rare,

inimitable, and non-substitutable (Barney, 1991). The theory is a useful framework because it advocates achieving competitive advantage through internal resources rather than external environment factors that dairy farm managers cannot control nor manage for their own advantage. Research findings were reported based on the RBT fundamental assumptions that valuable, rare, inimitable, non-substitutable, heterogeneous, and immobile resources confer sustained competitive advantage.

6.1 Methodological Conclusions

This inquiry required the identification of constructs such as social complexity, causal ambiguity, path dependency and farm specific knowledge and skills that are the foundation of the RBT. So far, there is no well-developed method of measuring and identifying such constructs and the difficulty of operationalizing such constructs has been noted by Levitas and Chi (2002: 960). However, even though identifying and measuring such constructs presents a challenge for RBT empirical researchers, Coff (1997: 395) suggested that imperfect measures might still yield useful insights.

For this study, interpersonal relationships among employees and between employees and managers were used as proxies for social complexity. Those relationships were based on kinship and friendship ties and therefore not easy to imitate from one farm to another. Recruitment through employee referrals was used as a proxy for external social networks between employees and outsiders.

Causal ambiguity is difficult to observe and arises out of the inability of competitors to understand the relationship between an organization's resources and competitive advantage. The inability of managers to identify an individual's contribution

in teamwork production was used as a proxy for causal ambiguity. Another proxy is the lack of clear understanding of whether employees' satisfaction with current employment emanates from high compensation, more training opportunities, or interpersonal relationships at the workplace.

Path dependency simply implies that a farm's history matters and affects its ability to achieve competitive advantage. Since all six cases were family businesses, organizational culture that is determined by the family values and beliefs of farm owners was used as a proxy for path dependency. Routines and trust-based relationships between managers and herdsman are developed over time and therefore were used as proxies for path dependency too. Finally, on-the-job training of employees was used as a proxy for farm specific knowledge and skills. Those constructs are difficult to observe but the proxies were useful for gaining an understanding of how the HRM function can lead to competitive advantage from the RBT perspective.

6.2 Conclusion Regarding HRM on Dairy Farms

Having written mission statements was not related to having explicit goals on dairy management. While two cases had written mission statements, respondents in three other cases verbally stated the unwritten mission of their farms. Five cases had explicit goals. One case demonstrated that not having an explicit or implicit mission statement resulted in lack of explicit goals on dairy management. The stated missions revealed that the two main strategies for the dairy farm enterprises is either expansion by increasing herd size or maintaining the farm at current size. Employees identified explicit goals that are measurable and specific as important yardsticks of value creation. Avoiding costly

mistakes was also identified as another way that employees contribute to create value for their employers' farm enterprises.

Dairy managers were gravitating towards hiring Hispanic employees rather than American employees. Attracting American employees to work on the farms was becoming a challenge and managers found immigrant Hispanic employees a viable option for labor supply. They also perceived Hispanic employees to be more productive and have strong work ethics compared to their American counterparts.

Employee referral is the main recruitment method and selection of job candidates is mainly based on kinship and friendship ties with incumbent employees. Selective hiring based on this criterion resulted in employees who are compatible working together in teams. Termination and voluntary turnover was high in the case where managers hired walk-ins with no ties to incumbent employees thus indicating that social capital was critical to employee retention. Employees create value for their farm enterprises when they recruit and recommend other individuals with strong work ethics for employment. This enables the managers to overcome the problem of adverse selection and reduce the cost associated with recruiting and selecting through formal means like advertisement in local newspapers or use of recruiting agents.

All cases provide on-the-job training to non-supervisory employees regardless of their prior experience but the training approaches vary from case to case. New hires in all cases are trained by working alongside experienced coworkers. In two cases, the herdsman first train the new hires before assigning them to work alongside other coworkers for further training. Training was identified to enhance the productive capacity of employees and therefore increase their ability to create value. External training equips

employees with general knowledge and skills that can be applied on different farms. Internal training equips employees with farm specific knowledge and skills that may not be in demand outside the farm and hence not readily transferable or easily imitated. Outsourcing of training activities through the use of consultants provides general skills that are transferable across farms and hence a potential source of competitive parity. Training opportunities for employees varied with the farm herd sizes. Farms with larger herds provide more training opportunities to employees compared to those with smaller herds. Farms that provide more training opportunities to employees also experience fewer costly mistakes by employees. The trade-off for smaller farms that minimize their labor costs by not investing in training employees is having employees who are not competent enough and hence a high incidence of employees making costly mistakes.

Milking routines varied across the cases and employees in three cases were expected to strictly follow the routines by specializing in milking only. Milking routines are developed over time and thus create a barrier to imitation and transferability. An employee trained on one farm may not be able to follow the routines of a different farm without training suggesting that employees are not of equal use across cases. However, as was evident in two cases, strict routines and job specialization leads to monotony of work and consequently voluntary turnover. The trade-off for lack of specialization and strict routines is that employees perform variety of tasks that minimize the incidence of voluntary turnover due work monotony but increases the chance of employees lacking high level of competencies gained by doing routine work.

The compensation structure varies from case to case. Farms with larger herds provide higher wages and more benefits compared to farms with smaller herds. Wages

and benefits provided to employees varied even within cases and the information on how much each employee earns is kept confidential between the employer and employee. Thus, it is not easy for one case to entirely imitate the compensation structure of another case. Incentives and bonuses were used to motivate employees create value for the farm enterprises by striving to achieve the set goals on dairy management. Unlike non supervisory employees, herdsmen valued their interpersonal relationships with managers and autonomy to do their work. They would also not accept alternative employment offers that provide higher pay without taking into account whether they would have close working relationships with their new employers or job security. This suggests that social capital at work is important for employee retention.

Except for one case, termination was reported to be seldom. Peer pressure was used in tow cases to compel employees who do not meet performance expectations or fit into the organization culture to quit. Peer pressure, based on teamwork, eliminates the need for close supervision and monitoring of employees because the employees can regulate each others' behavior by enforcing the group norms. Overall, the managers recognized the importance of hired labor to the success of their farm enterprises and three managers considered losing their employees due to voluntary turnover as their worst-case scenario in human resource management.

Across case comparisons of the HRM practices indicate that although the cases have some similar HRM practices such as recruiting and selection, and some variations in other practices such as training and compensation practices, it is the distinct organizational culture mainly based on the family values of the managers, the interpersonal relationships among employees based on kinship and friendship ties, and

the farms' resource endowment (herd size, number of employees) that leads to different organizational outcomes. Organizational outcomes such as low rates of voluntary turnover and termination and low incidence of costly mistakes by employees do not emanate from single or isolated HRM practices. While recruitment through referrals and selection of new hires with ties with incumbent employees was reported to result in compatible teams, other HRM practices like compensation and training, together with the organizational culture influenced the outcomes. Therefore, managers in each case have the potential to develop their own unique human resource system that can be a potential source of competitive advantage.

The empirical results from the six case studies lend support to the claim that dairy farm managers can effectively and efficiently manage their human resources to achieve competitive advantage. Human resources and the emanating human resource systems on dairy farms have the potential of being valuable, rare, inimitable, and non-substitutable if effectively managed. Therefore, both managers and researchers can use the HRM function to explore and understand why some dairy farms achieve superior performance in the U.S dairy industry while others do not.

6.3 Recommendations for Practice

Results from this study indicate that dairy farms have the potential of achieving competitive advantage through the HRM function. Managers can effectively use HRM practices to develop a skilled and motivated workforce that can be a potential source of competitive advantage for their farm enterprises. This can be achieved if managers strive to understand their employees' role in creating value for their enterprises and how their

HRM practices affect the bottom line. Equally important is making effort to understand how their resource endowment, family values, and organizational culture influence their HRM practices.

To attain competitive advantage through employees, it would be important for managers to align their HRM practices with the mission and goals of their farm enterprises. Having a mission statement, whether written or unwritten, is crucial in formulating goals geared towards the realization of the mission. While some managers could verbally state the mission of their farms, having a written mission statement and supportive long-term goals is desirable. Specific and measurable goals on dairy management (milk production volume, quality of milk, milk yield per cow, calf mortality rate, and reproductive efficiency) are important yardsticks of evaluating the contribution of employees in creating value for the farm.

However, having a mission statement and goals is not enough if they are not communicated explicitly to employees. Communicating the mission and goals of the farm enterprise to employees is paramount in ensuring that employees know what is expected of them and how their performance is evaluated. This calls for managers to provide feedback to employees on their performance. Communicating the mission statement and goals of the farm to employees also enables employees to understand their expected roles in the future direction of the farm and therefore gaining their commitment.

It is suggested that managers strive to understand that employees want to participate in something that has deeper meaning than just their daily work routines. Engaging employees in setting short-term goals in their respective jobs through use of participatory management makes them feel appreciated and valued and facilitates their

contributions to organizational performance. This was evident in one smaller farm where the manager solicited for the advice and input of all his employees. Employees would also appreciate if they get feedback from managers or herdsman on their performance evaluation and suggestions on how they can improve their performance. Lack of feedback may lead to high turnover as was reported in one case where the management failed to provide positive feedback to employees. Language barrier may be one of reasons for lack of feedback but the problem can be overcome by use of hired translators during staff meetings. A long lasting solution for the language barrier problem would be for the managers and herdsman to take Spanish classes and sponsor the Hispanic employees to take English classes.

One way of increasing the value of the farm enterprise is by hiring employees with strong work ethics and competencies and the opposite is true. Therefore, selective hiring is very important even when recruiting through employee referrals. Results from this study indicate that recruiting walk-ins resulted in frequent termination and high voluntary turnover. Obtaining information about the work ethics of potential employees before hiring and interview them, whether from current employees or referrals, to determine whether they are a good match with current employees or will fit into the organizational culture may be helpful in reducing high turnover and increasing employee retention. While selecting employees based on kinship and friendship ties increases the likelihood of employees being compatible working together, hiring employees who like dairy farm chores, have legal employment status, and skills that complement those of current employees may increase retention. Hiring of Hispanic employees calls for the managers and herdsman to endeavor to understand the culture of those employees and

learn how to manage employees with different cultural backgrounds in the workplace. Managers and herdsmen may benefit by training themselves about cross-cultural supervision by trying to learn and understand the family values, religious beliefs, and expectations of their Hispanic employees through their day to day workplace interactions.

It is suggested that managers determine competencies that are deficient among their employees and invest in developing those competencies through extensive training and education to enhance the value creation ability of their employees. To attain competitive advantage through training, training should be geared towards attainment of more than just general skills that are in demand by other farms. Providing training that is specific to the needs of the farm would ensure that employees have skills and knowledge that are not in high demand elsewhere and hence increase retention. One way of achieving this is developing milking routines that are specific to the farm enterprise. However, only routines that lead to high performance (increased milk yield and consistent low somatic cell counts in milk) and make bottom line economic sense need to be practiced. Results from the case studies indicated that strict routines combined with job specialization lead to work monotony and employee turnover. One effective way of overcoming this problem is by use of job rotations and flexible working hours that allow employees to balance their work and social life.

Managers would benefit by exposing their supervisory employees to training programs designed to help them acquire people management skills such as leadership skills and communication skills. Non-supervisory employees may also be exposed to more training on different technical aspects of dairy management such as animal healthcare, nutrition, calf rearing, and milking. Providing more training to employees is

one of the effective ways of reducing the chances of them making costly mistakes. Managers would also benefit by attending training programs on strategic planning to understand how to align their HRM function with the mission and goals of their farm enterprises. It would be beneficial for managers to endeavor make to training and education of employees an ongoing activity in order to ensure that human resources remain a source of competitive advantage.

A competitive compensation package ensures that non-supervisory employees will not leave when a higher paying employment opportunity comes. While the information on wages is kept confidential between the manager and employees, it is suggested that managers aim at achieving internal pay equity by eliminating wage differentials among employees in the same job group with similar experience, skills, and knowledge. Evidence from the study indicates that provision of healthcare insurance and retirement benefits may increase retention. Since all cases pay non-supervisory employees on hourly basis, it is instructive that herdsmen closely monitor employees to in the absence of group work where employees regulate each others' behavior to achieve performance targets. While provision of group incentives and bonuses is important in linking performance and rewards, tying employees' pay increases to performance rather than seniority in employment would be another form of incentive for high performance.

It is advantageous for managers to know that compensation is not the sole driver of high performance and retention. Social interpersonal relationships among employees and between employees and managers are also important. Besides high compensation, employees appreciate having good working relationships with their managers and coworkers and herdsmen, in particular, esteem having autonomy at work. Therefore,

nurturing positive relationships based on kinship and friendship ties in the workplace may increase retention and employees' satisfaction with employment.

It is desirable for managers to understand how employees contribute to increase the value of the farm enterprise and to provide the necessary incentives or how employees may erode the value of the farm enterprise and to provide necessary measures to avoid the erosion. For example, providing close supervision, clear instructions and training programs can prevent employees from making costly mistakes. Investing in trust-based relationships, especially between managers and herdsman, may be useful in reducing the uncertainties related to the employment relationship such as voluntary turnover or dismissal of employee without prior notice. Providing employees with job security not only increases retention but also ensures that the farm specific knowledge and skills are not transferred to other farms. This is important in making it difficult for competitors to imitate skills and knowledge that lead to superior performance from another one farm hiring out their employees.

It is instructive for managers who plan to expand their operations to be prepared for post expansion human resource management challenges. Previous studies indicate that increase in herd size leads to labor efficiency but also brings challenges related to evaluating employees, achieving managerial performance goals, finding qualified full-time employees and training (Bewley et al., 2001; Hadley et al., 2002). Attending training programs on human resource management before, during, and after expansion is recommended.

Finally, managers could benefit by realizing that competitive advantage does not emanate from adopting single HRM practices only. Rather than focus on adopting

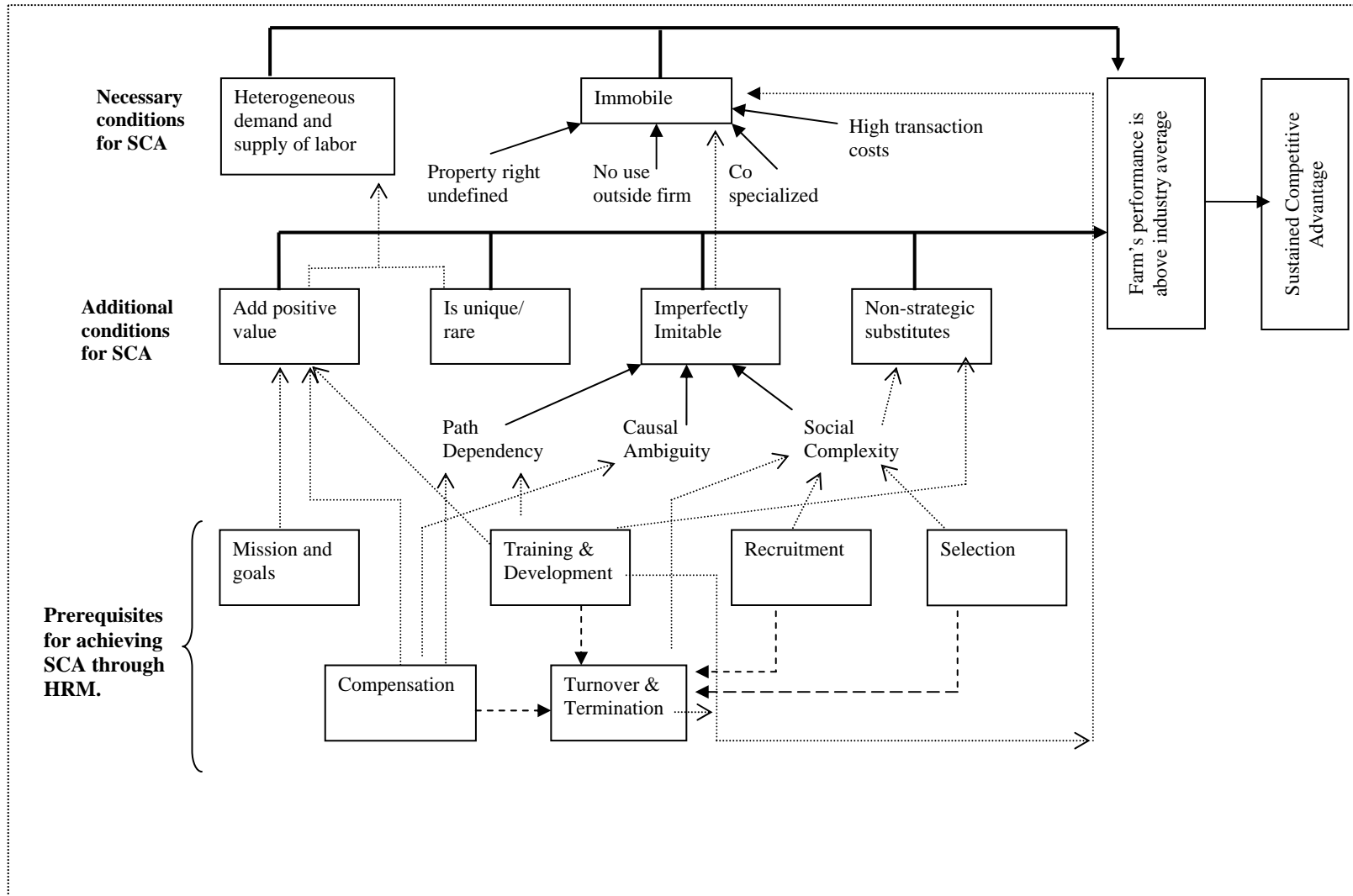
isolated HRM practices, managers would benefit by integrating various HRM practices with their unique organizational culture and resource endowment into an interdependent HR system. Therefore, while competing farms may adopt similar HRM practices, it is the emanating HR system that is dependent on the organizational culture and resource endowment of a farm that makes it difficult for competitors to have the same competitive advantage. Thus, this calls for managers to exercise caution before imitating HRM practices of another farm without understating how it fits within the HR system of their farms.

6.4 Recommendations for Future Research

The RBT has been a useful theoretical framework for understanding how human resources in the six dairy cases can be a source of competitive advantage and the role of the HRM function in this process. To gain better understanding on how to achieve competitive advantage through human resources, future empirical research should test the relationship between the RBT key assumptions and farm performance. Levitas and Chi (2002: 960) and Rouse and Daellenbach (2002: 965) both state that RBT can be validated empirically without having to operationalize all its key constructs.

The model depicted in Figure 6.1 provides a conceptual framework of how different HRM practices from this study relate to the four key assumptions of the RBT.

Figure 6.1 A Proposed Conceptual Framework for Human Resource Based Theory



The model also draws from the work of several authors on the RBT that was reviewed in chapter two (Barney 1991, Wright et al., 1994 and 2001). The model demonstrates that sustained competitive advantage is not just a function of isolated HRM practices but of the integration of those practices and the human resources within an organization.

The dotted arrows from the boxes with HRM practices indicate how the practice relates to the four key assumptions of the RBT. For example, the arrow extending from compensation to add positive value indicates that managers can use compensation to add value to the farm, say by providing performance based incentives. The arrow extending from compensation to path dependency indicates that the compensation system of a firm is path dependent. Solid arrows that link path dependency, causal ambiguity, and social complexity indicate that those three factors lead to a resource being imperfectly inimitable. Likewise, solid arrows linking to immobility indicate the factors that contribute to a resource being immobile as was described in chapter two.

The dotted arrows linking add value and rare to heterogeneity indicate that the assumptions of a resource being valuable and rare contribute to the resource being heterogeneous (Barney, 1991; Lado and Wilson, 1994). The dotted arrow linking imperfect inimitability to immobile indicates that meeting the conditions of not being easy to imitate also contributes to a resource not being easy to transfer from one case to another. Therefore, empirically test the relationship between the HRM function and a farm's performance based on the RBT, one needs only to test whether human resources meets the four key assumptions of being valuable, rare, and imperfectly inimitable and have no strategic substitute. Results of this study indicate that smaller farms are more

labor efficient than larger farms. It would be appropriate to test whether smaller dairy farms utilize their human resources more efficiently than larger farms.

The dashed arrows from compensation, training and development, recruitment, and selection indicate that those four practices have an effect on termination and voluntary turnover. Termination and turnover together with the direct effect of training and development eventually affect the mobility or immobility of human resources. The solid lines indicate the conditions postulated by the RBT for a resource to generate competitive advantage.

Before testing the theory one needs to operationalize the key criteria that human resources and the HR system have to meet to fulfill the RBT assumptions of a resource being valuable, rare, inimitable and non-substitutable. This can be achieved by constructing proxy variables that correspond with each of the key assumptions. A Likert scale would be useful to quantify the variables for the purpose of quantitative analysis.

For example, Dyer and Chu (2003) operationalised trust using multiple scale items designed to measure the extent to which the supplier trusted the automaker not to behave opportunistically. Each scale item was measured on a seven-point Likert scale. King and Zeithaml et al. (2001) used a protocol of open-ended questions to identify a range of competencies by interviewing 224 executives in 17 organizations to test managers' perception of causal ambiguity regarding the link between competencies and firms' performance. A total of 69 competencies were generated in two different industries. Survey items based a seven-point Likert scale were used to assess how managers perceived whether their organization was at an advantage or disadvantage with

respect to its competition for each competency. Paladino et al. (2000) generated 17 items on a five-point Likert scale to test the RBT assumptions of inimitability.

This study has explored the potential of dairy farms achieving competitive advantage through its human resource function. The study was a follow up of an earlier focus group study by Bitsch et al. (2003) that explored various HRM practices by dairy and green industry producers in Michigan. The study concluded that labor risk is a major concern for agricultural producers and need to be included in agricultural research. Future studies that use a survey instrument to quantitatively test the relationships between the HRM practices and performance of farm enterprises, based on the proposed conceptual framework of the Human Resources-based theory in figure 6.1, will bring to our understanding the importance of the HRM function at the farm level and possibly guide researchers in theory building. Discriminate analysis and factor content analysis can be used to analyze the quantitative data.

APPENDICES

APPENDIX 1

Summary of Empirical Research on Human Resource Management in Agriculture

Study Authors	Farms Studied	Methodology	Focus of Study	Findings
Bitsch et al. (2003)	40 greenhouse managers and 22 dairy operation managers in Michigan	Focus group discussions	To identify risk in managing personnel in agriculture	<ul style="list-style-type: none"> • Labor risks a major concern and need to be included in agricultural research.
Michael and Leschinsky (2003)	123 hardwood lumber producers in Pennsylvania	Mailed survey	To investigate the training needs of Pennsylvania hardwood lumber producers	<ul style="list-style-type: none"> • Training is needed at all levels of the responding organizations, • Training in leadership perceived as more important than wood science or process controls
Perloff and Tran (2002)	National representative of 1583 farm workers in fruit and vegetables, nursery crops, field crops and cash grains.	National Agricultural Workers Survey of 1987-91. Econometrics estimate using the stationary first order markov model of employment turnover	To estimate the probabilities that workers who receive amnesty would more likely flee agriculture than would undocumented workers	<ul style="list-style-type: none"> • Agricultural workers move in and out of agriculture frequently, with migration between types of jobs taking relatively little time. • The prediction made by the 1986 IRCA that granting people amnesty would induce most of them to leave agriculture was incorrect
Hadley et al. (2002)	20 dairy operators in Michigan and Wisconsin	Survey using a questionnaire followed by	To examine how expansion affect profitability, labor	<ul style="list-style-type: none"> • Human resource management one of the most important skills to achieve a successful expansion.

Study Authors	Farms Studied	Methodology	Focus of Study	Findings
		interviews	efficiency, milk production and managerial responsibilities	<ul style="list-style-type: none"> • Availability of full time employees the most common pre expansion HRM problem encountered. • Evaluating employees the greatest HRM problem after expansion • Inexperience in communicating with employees is the cause of HRM problem after expansion.
Cuykendall et al. (2002)	76 dairy operations with or without crops, vegetable, other livestock, fruits and nurseries operations in New York	Interviews using questionnaire	To identify the management practices that farmers believed were important for their success in small farm operations	<ul style="list-style-type: none"> • Many farms make use of family labor and hire only high school students and seasonal labor • Average labor use was two full time workers • Most of the operators worked over 60 hours per week • Small farmers purchase labor saving equipments and structures, design special work routines, and avoid labor consuming activities • Horticultural farms reduce labor needs by letting the customers do the harvesting.
Maloney (2002)	20 dairy farm employers in New York	19 telephone survey using questionnaire and 1 mailed survey.	To assess how dairy farms managers feel about their experience in managing Hispanic employees	<ul style="list-style-type: none"> • Hispanic employees are a viable workforce option for the dairy industry • Employers who had hired Hispanic employees reported excellent work performance despite language and

Study Authors	Farms Studied	Methodology	Focus of Study	Findings
Bewley et al. (2001)	302 Wisconsin dairy producers	Survey using questionnaire	To examine responses in milk production and labor efficiency resulting from modernization process of dairy operations	<p>cultural issues.</p> <ul style="list-style-type: none"> • Issues to address in managing Hispanic employees include language, cultural differences, prejudice, turnover, isolation, alcohol abuse, and immigration status. • Managing labor the most daunting challenge facing producers following expansion. • Producers who built all new facilities spend less time on farm work and more time managing employees and had less difficult finding, training, supervising and keeping farms workers than producers who modified facilities or added new facilities. • Problems with labor management decreased with increasing herd sizes. • Employer perception of turnover, worker recruitment, and the migration origin of workers may affect employer's wage and employment decisions. • Employer managerial decisions (wage levels and diversification strategies) have significant effect on worker retention.
Thilmany (2001)	About 600 farm employers in Washington State	Data come from different sources: Farm labor survey data, seasonal farm labor survey, and employer tax records.	To explore whether employer specific factors such as commodity, region, size and management practices influence workers turnover and the ability of employers to attract return workers	

Study Authors	Farms Studied	Methodology	Focus of Study	Findings
Billikopf (2001a)	42 farm supervisors in Northern San Joaquin Valley, California	Econometrics models used to analyze data Field interviews	To explore how farm supervisors feel about their jobs, and how they become supervisors	<ul style="list-style-type: none"> Workers felt little need for additional training before becoming supervisors Relationship with people the most challenging and rewarding experience Employee discipline important aspect of supervisory work 73 % of supervisors were farm workers offered the job, 23 % worked their way up.
Billikopf (2001b)	173 workers in multiple types of crops and farm operations in Northern San Joaquin Valley, California	Interviews	To explore causes of conflict for both farm workers and supervisors, and approaches taken to resolve conflict	<ul style="list-style-type: none"> Farm workers have more conflicts with supervisors than coworkers Workers chose confronting over other approaches as a first step in dealing with conflict.
Fogleman et al. (2002)	189 farm operation managers in Kansas	Survey	To gather compensation information of the farms in Kansas	<ul style="list-style-type: none"> Both cash wages and total compensation tend to increase as competency levels of employees increase.
Fogleman (1999)	709 full-time, non-owner employees on 92 farms that are	General farm information surveys, internal	To benchmark information about the market value of dairy	<ul style="list-style-type: none"> Task identity and autonomy main source of employee satisfaction, feedback the least source.

Study Authors	Farms Studied	Methodology	Focus of Study	Findings
	members of the Northern Dairy Producers Association.	pay structure survey, and employee survey.	farm wages and benefits, the satisfaction levels of fulltime, non-owner employees, and the relationship between compensation and employee job satisfaction.	<ul style="list-style-type: none"> • Feedback is not associated with wages or other factors but more with the amount and quality of communication an employee has with farm owners or managers
Billikopf (1999)	265 seasonal and year around workers in Northern San Joaquin Valley, California (orchards, vineyards, vegetable, agronomic, dairy and livestock operations)	Field interviews	To determine workers feeling and perception about work	<ul style="list-style-type: none"> • Workers generally contend with jobs but prefer better pay • Workers not necessary looking for work outside of agriculture • Treating workers with respect, constructive criticism of job performance, reasonable work pace and complete job instructions can improve working conditions of workers.
Perloff et al., (1998)	3343 hired farm workers which is a subset of 4718 farm workers in the NAWS survey	U.S. Department of Labor National Agricultural Survey (NAWS)	To estimate the impact of legal status, other workers attributes, and other factors on migration decisions.	<ul style="list-style-type: none"> • An expected earning differentials from migration induces migration • A 10% earning differentials raises the probability of migrating by only 1%, indicating that there are substantial costs of migrating and employer must
		Mover-stayer		

Study Authors	Farms Studied	Methodology	Focus of Study	Findings
Anderson (1998)	219 dairy farms in Michigan	Mailed survey	To determine the working conditions of Michigan dairy farm employees	<p>offer earnings premia to induce a substantial number of workers to move to their jobs</p> <ul style="list-style-type: none"> • No relationship between herd size and wage rates but larger farms offer employment benefits. • Word of mouth main recruitment method followed by advertisement • Most farms (59%) employed student labor, and • Compensated on hourly basis (55%) • Most of farmers did not want the Michigan State University extension to play an active role in their employees' training.
Billikopf (1997)	211 crew workers at 19 job sites in Northern San Joaquin Valley, California (orchards, vineyards and vegetable operations)	Field interviews	To determine workers preferences for employment directly with growers or through an FLC intermediary	<ul style="list-style-type: none"> • Crew workers prefer for working directly for growers than for FLCs • Growers perceived as providing superior pay, benefits and working conditions than FLCs.
Thilmany and Blank (1996)	569 California growers	Survey using questionnaire, probit model	To estimate differences in increased FLC usage across employers	<ul style="list-style-type: none"> • Growers use FLC as a form of labor risk management, beside cost considerations.

Study Authors	Farms Studied	Methodology	Focus of Study	Findings
		used to analyze data		
Billikopf (1996)	160 fruit, 157 vineyards, and 87 vegetable growers in California	Survey using questionnaire	To find growers and crew workers perception about piece rate pay	<ul style="list-style-type: none"> • Transfer of labor management to FLC likely to continue if the event of further immigration reforms. • Crew workers evenly split between those who prefer hourly pay and those who prefer piece rate pay. • Workers prefer piece rate pay because of desire to get work done quicker and earn more. • Workers prefer hourly pay because of the slower paced working conditions.
Billikopf (1995)	510 seasonal farm workers in 15 crews in Northern San Joaquin Valley, California	Field interviews	To explore workers perception about agricultural conditions that affects their decision to leave early when paid a piece rate.	<ul style="list-style-type: none"> • Lower wages more likely to lead workers to an early exit than higher wages • Substitution effect more important to seasonal workers than income effect • Increased wage earnings motivate low income workers to work longer hours
Reed (1994)	About 240 dairy owners in California	Mailed surveys and randomly selected interviews	To determine whether any correlation s exists between herd size, production and labor management	<ul style="list-style-type: none"> • Herd managers and milkers on larger dairies earn more than counterparts in smaller dairies • Union employees earn more than their counterparts in wages and benefits. • Team training and continuing education influence herd productivity

Study Authors	Farms Studied	Methodology	Focus of Study	Findings
Taylor and Thilmany (1993)	7 years matched longitudinal farm worker data file assembled from California unemployment insurance records	Farm worker turnover hypotheses testing using a probit model	To analyze trends in farm worker turnover as a means of indirectly testing the hypothesis that IRCA reduced the flow of immigrant into agriculture	<ul style="list-style-type: none"> • Hypothesis that IRCA was effective in curtailing the supply of new immigrant in California agriculture rejected
Billikopf and Norton (1992)	179 grape growers from 15 counties in California	Survey using mailed questionnaires	To determine whether pay method, hourly verses piece rate, affect speed and quality of the work of vineyard pruners	<ul style="list-style-type: none"> • Employees paid at piece rate have faster pruning speed • Pay method does not affect quality of work
Vaupel (1992)	70 growers and shippers in Salinas Valley, California	Mailed surveys	To gather background information on growers experiences with FLCs and Custom Harvests, and to test the feasibility gathering such information through a mailed survey	<ul style="list-style-type: none"> • FLC are hired to work in a large variety of crops and tasks, and number of employers hiring FLCs to harvest crops is increasing • Common reasons for hiring FLCs are to reduce paperwork, costs, and supervisory responsibilities. • Main reasons for hiring custom harvesters (CH) is cost savings, but the main disadvantage of CH is loss of control
Howard et al. (1991)	42 employers and 121 employees on swine farms in	Survey based interviews	To determine the compensation package and what factors affected	<ul style="list-style-type: none"> • Employees made less money than counterparts in nonagricultural industries

Study Authors	Farms Studied	Methodology	Focus of Study	Findings
	southwestern Ontario		the attraction, keeping, and motivation of labor.	<ul style="list-style-type: none"> • Female employees paid less than male employees even though they were no different in other employment or educational characteristics • Turnover rate lower than in non-farm industries. 55% of employees intended to leave their employment within 3 years. • Workers migrate for seasonal work in response to an expected wage differentials in favor of migrating work
Emerson (1989)	559 male farm workers in Florida. Data collected in 1970	Random survey Of farm workers in 1970 Econometric model of temporarily migration within the context of farm labor market	To examine the influence of economic incentives on participation in the migration stream	<ul style="list-style-type: none"> • Workers migrate for seasonal work in response to an expected wage differentials in favor of migrating work
Billikopf (1984)	About 100 workers in dairy operations in San Joaquin, Stanislaus and Merced Counties, California	Field Interviews	To determine the reasons for workers leaving jobs, and estimate the turnover rate	<ul style="list-style-type: none"> • About 82 % of terminations are employee initiated, and 80 % of turnover under some degree of dairy operator control. • Main reasons for leaving include compensation benefits, personal problems, economic problems of dairy,

Study Authors	Farms Studied	Methodology	Focus of Study	Findings
				relationship with workers and management.

APPENDIX 2

Human Resources Management in Agriculture Research Protocol for Case Studies

Case Study Participants. Managers, supervisors, and employees of dairy farms will be interviewed on site. Follow-up interviews may be done either on site or by phone. Site visits will also include some observational data collection (i.e., overall impressions of operations, modernity, cleanliness, employee facilities, work environment, atmosphere, and openness).

Initial Contact with Participants. The owner or manager of an operation will first be contacted by phone and the purpose of the study explained. If the owner/manager agrees, an interview date will be scheduled. At the beginning of the initial meeting, the consent procedure for the study will be explained and consent forms signed. The manager will also be asked to suggest supervisors and non-supervisory employees for interviews. These potential interviewees would also be contacted (without involving the manager). If they show interest in participation, the consent procedure and the study will be explained to the additional participants.

Interview Protocol. The interviewers will follow an interview guide (outlined below) for the three different groups of participants (owner/managers, supervisory employees, and non-supervisory employees). Most of the questions are open-ended, and additional questions will be more specific as the interview proceeds. As is typical for case study research with in-depth interviews, interviewees will be asked to elaborate on topics that they have brought up. Therefore, the sequence of questions might change as a result of the answers provided by the interviewees.

Interview Guide for Managers and Owners

- 1) Overall, how satisfied are you with your operation? With its financial performance? With your employees? How would you evaluate your customer satisfaction, the quality of your products, services? Are you a (co-)owner of this operation or a hired manager? How long have you been in this position? What did you do before that? If this is a family business, how do you feel about that? What are the advantages or disadvantages of a family business versus other types of business? How do you feel about your work/life balance? What do you like about your job? What do you dislike about your job?
- 2) What are your primary goals for this operation? How do you involve your employees at different levels in setting these goals? How often do you review these goals? How do you go about long-term planning? How are personnel management decisions included in planning? When you think about your last long-term planning process, how were employees at different levels involved in the process? How do your employees know how the business is doing financially, with respect to quality and customer satisfaction? Do you have a vision or mission statement? Can you share it?
- 3) If you have an off-season, when your labor needs peak again, what percentage of your workforce will be returning employees? What arrangements do you have with your employees for the off-season?
- 4) How do you determine the number of employees you will need in the near future and the skills required? How do you get job applicants for any openings (general labor, supervisory)? If you think about the last couple of hires, how did you decide whom to hire (selection)? What would be reasons not to hire an applicant? How are your experiences with temporary services (advantages/disadvantages)?
- 5) When a new employee first starts to work here, how does that look like (orientation)? What type of training do new employees receive? How do you make sure that the training was successful? If any of your employees do not know how to complete a task, what would they do (ask co-worker, ask supervisor, ask you etc.)? What retraining procedures are in place after the initial training? In what other

- developmental activities are your employees participating (trade shows, seminars, etc.)? When a general employee is promoted to a supervisory position what additional training and developmental activities are involved?
- 6) How important are teams in the way you organize work around here? Could a person work alone all day? When employees are working as a team, who decides who works with whom, what everybody does, and how the work is done? Can you tell me about a situation when a team had a slow or sick employee, how was this handled?
 - 7) How do you decide what each employee earns in wages or salaries (starting wages, long-term employees' wages, supervisor wages)? How does teamwork figure in the pay system? How do you decide about raises? What is the relationship between each employee's performance and what they earn (different arrangements depending on job level, type of tasks)? Do you use any type of incentive pay? How do you pay for overtime? What benefits do employees at different levels and tenure receive (housing provisions – rent, utilities, health care, sick leave, paid vacation, retirement plans)? Any employee contribution for these benefits? What additional perks do employees receive (free drinks, pizza, products, use of tools, of rooms)? Do your employees understand the wage and benefit structure? Do they think it is fair?
 - 8) How would you describe your employees? Are you rather similar to them or rather different?
 - 9) Can you share an experience, when an employee was not performing like everybody else. What happened? How was the problem resolved? When would this be acceptable?
 - 10) At what level are firing and hiring decisions handled? When did you last have to fire one of your employees? What happened? What are grounds for firing someone?
 - 11) How would you describe your relationship with your employees? How do you let them know that they are doing a good job or where they need to improve? Can you tell me about a situation when you felt that you are too close to your employees, that you should have a more business-like relationship? How about the opposite situation?
 - 12) How do you get your employees' opinion about workplace decisions, e.g., how the work is done? Can you tell me about a situation when one of your employees

- suggested a change or an improvement? What happened, how was it used (or dealt with if not used)? What did the employee get out of it?
- 13) Can you tell me about the last time that you changed some of the work procedures? How were your employees prepared for these changes?
- 14) Tell me about a time when an employee made a serious mistake. Did the employee report to his/her supervisor (to you)? How did the supervisor (you) react? Can you tell me about a situation when you did admit to making a mistake in front of your employees?
- 15) Tell me about a problem employee you have had to deal with (tardiness, absenteeism, safety concerns, drugs, alcohol, violence)? How did you deal with this? How did you ensure that employees know your policy with respect to discipline, violence or harassment?
- 16) Tell me about your accident prevention and safety program. What was the most severe workplace accident that happened in your operation? How was that investigated? What were some of the consequences? Could that happen again? Did any of your employees have an accident on the trip between home and work? What happened? How did you deal with it (policies, discipline procedure)? Do your employees have any work related health problems? How would you know?
- 17) Conflicts among staff can be a problem. Can you tell me about a time when there were conflicts between co-workers, between workers and supervisors, between supervisory personnel? What were the sources of the conflict? How did you deal with the conflict? What policies do you have regarding conflicts? How do you become aware of these problems?
- 18) Did you ever have any intentional damage done by an employee? Please, elaborate.
- 19) Were you ever brought to court by an employee? How was that settled?
- 20) How confident are you about your knowledge of rules and regulations regarding hiring labor? Have you ever been inspected by a government agency (INS, OSHA, DOL-wage and hour)? What did they find? What were the consequences? If you are employing immigrant employees, what would be the consequences for your operation if immigration would be substantially reduced?

- 21) What are your gross sales? How many employees do you have (core employees, seasonal employees)? How many are supervisory level? What is the percentage of Hispanic employees in your operation on the general labor level, on the supervisory level? English/Spanish skills? How did management change since working with Hispanic employees? What are some of the specific opportunities and challenges? How did this impact your bottom line?
- 22) Overall, do you feel that everybody is working for a common goal? Is there anything unique or unusual about your employees that gives you an advantage versus other similar operations? What are some of the specific strengths and weaknesses of your personnel management practices? What has worked well for you? What did not work well? What are the specific risks caused by hired labor? What does this mean for your business? What is the worst case scenario? What are you doing to prevent this from happening?
- 23) Is there anything else you think I need to know?
- 24) Do you have any questions for me?

Interview Guide for Supervisory Employees

- 1) Tell me about your work at <name>? What are your major tasks? How long have you been working here? What did you do before that? How long have you been a supervisor? What do you like about your job? What do you dislike about your job? How would you feel about recommending <name> to a friend as a place to work? Are any of your friends working here? What would be a reason for you to look for or accept a different job?
- 2) Overall, do you feel that everybody is working for a common goal? Can you tell me about the production goals, quality goals? What do these goals have to do with your daily work? How do you know these goals? What is your input in setting these goals? Can you tell me about the planning process: what is your input in short-term or long-term planning?

- 3) In your view, what are the strengths and the weaknesses of the personnel management practices, here? What would you like to change?
- 4) How important are teams in the way you organize work around here? Could a person work alone all day? When employees are working as a team, how do you decide who works with whom, who does what, and how the work is done? Can you tell me about a situation when a team had slow or sick employee, how was this handled?
- 5) How do you feel about wages and benefits? How does the wage system work? How do the quantity and quality of your work influence the success of <name>? How does it influence what you earn? When you got your last raise, what was it for? Do you think everybody is treated fair and equally? Please elaborate. What benefits (housing – rent, utilities, health care, sick leave, paid vacation, retirement plan) do you receive? What additional benefits would be important for you? What other perks do you receive and how important are they to you (free drinks, pizza, free products, use of tools, use of facilities, etc.)?
- 6) Do you have any input in workplace decisions, e.g., how the work is done? Tell me about a time when you suggested a change or an improvement? What happened, how was it used?
- 7) How did you get this job? When you first started to work here, what training did you receive? What additional training was given to you? Are you involved in any developmental activities (trade magazines, trade shows, seminars, trials and experiments, etc.)? What type of supervisor training did you receive? What additional training would be beneficial for you?
- 8) Can you tell me about a situation, when you did not feel comfortable doing the work you were asked to do? Tell me about a time when you reported to your boss that you made a mistake? What happened? Can you tell me about a situation when your boss admitted to making a mistake?
- 9) How would you describe your relationship with your boss? Are you rather similar to your boss or rather different? How does your boss let you know that you are doing a good job or where you need to improve?
- 10) Describe the process when someone starts working for you. How do you put the

- person to work (introduction, initial training, learning by doing, put together with a mentor or co-worker)?
- 11) Tell me about a time when someone working for you did not perform like everybody else. What happened? How was the problem resolved? When would this be acceptable?
 - 12) Tell me about a problem employee you had to deal with. If an employee is late, absent, what happens (discipline process)? Can you tell me about a situation when someone had a drug or alcohol problem (policies)? In general, how do you feel about the way problems or conflicts are treated here?
 - 13) At what level are firing and hiring decisions handled? When did you last have to fire someone (or told your boss to fire him/her)? What happened? What are grounds for firing someone?
 - 14) How would you describe the employees who work for you? Are they rather similar or rather different from you? How would you describe your relationship with the people who work for you? How do you let them know that they are doing a good job or where they need to improve? Can you tell me about a situation where you felt that you are too close to the people who work for you, that you should have a more business-like relationship?
 - 15) How do you get the opinion of the people who work for you about workplace decisions, e.g., how the work is done? Can you tell me about a situation when one of them suggested a change or an improvement? What happened, how was it used (or dealt with if not used)?
 - 16) Can you tell me about the last time that you changed some of the work procedures? How did you prepare for these changes?
 - 17) If one of the employees working for you does not know how to do a task, what would they do (ask co-worker, ask you etc.)? Tell me about a time when one of the employees working for you made a serious mistake. Did he/she report to you? How did you (other supervisors) react? Can you tell me about a situation when you did admit to making a mistake in front of the people who work for you?
 - 18) Have you ever been involved in any workplace conflicts (among the people who

- work for you, between a supervisor and non-supervisory employees, between boss and supervisor)? Can you give me an example of a workplace conflict? How was that investigated and handled? In general, what are typical sources of conflicts? How could conflicts be avoided?
- 19) Tell me about your accident prevention and safety program. What was the most severe workplace accident that happened, here? How was that investigated? What were some of the consequences? Could that happen again? Do the people you supervise have any work related health problems? How would you know? Is there a policy with respect to workplace violence and harassment? How do you make sure the employees you supervise are aware of the policy?
 - 20) Was ever any intentional damage done by an employee? Please, elaborate.
 - 21) Has <name> ever been brought to court by an employee? How was that settled?
 - 22) How many employees do you supervise? What is the share of Hispanic employees? English/Spanish skills? How do you communicate? How did the way you manage change since working with Hispanic employees? What are some of the challenges? When you think back at a time when you were not working with Hispanic employees, what are some positive changes? How would this operation change if immigration would be substantially reduced?
 - 23) How confident are you about your knowledge of rules and regulations working with hired labor? Has there ever been an inspection by a government agency (INS, OSHA, DOL-wage and hour)? What did they find? What were the consequences?
 - 24) Do you know how <name> is doing financially? What about product or service quality and customer satisfaction? How do you get information about this (newsletters, meetings)?
 - 25) Is there anything else you think I need to know?
 - 26) Do you have any questions for me?

Interview Guide for Non-Supervisory Employees

- 1) Tell me about your work at <name>? What are your major tasks? How long have you

- been working here? What did you do before that? What do you like about your job? What do you dislike about your job? How would you feel about recommending <name> to a friend or family member as a place to work? Is anybody of your family or friends working here? If work is not year-round, would you like to return to this job after the off-season? What would be a reason for you to look for or accept a different job?
- 2) Overall, do you feel that everybody is working for a common goal? Can you tell me about the production goals, quality goals? What do these goals have to do with your daily work? How do you know these goals? What is your input in these goals? Can you tell me about the planning process: what is your input in short-term or long-term planning? How do the quantity and quality of your work influence the success of <name>?
 - 3) In your eyes, what are the specific strengths and weaknesses of the personnel management practices, here? What would you like to change?
 - 4) Do you typically work in a team or rather by yourself? If you work in a team, do you get to decide with whom you would like to work? How is it decided who works with whom, who does what, and how the work is done? How do you feel about your work team? Can you tell me about a situation when your team (or another team) had a slow or sick member, how was this handled?
 - 5) How do you feel about wages and benefits? How does the wage system work? If the quantity and quality of your work is above average, will you earn more? Do you think everybody is treated fair and equally? What benefits do you receive (housing – rent, utilities, health care, sick leave, paid vacation, retirement plan? What additional benefits would be important for you? What other perks do you receive and how important are they to you (free drinks, pizza, free products, use of tools, use of facilities, etc.)?
 - 6) How did you get this job? When you first started to work here, what training did you receive? What additional training is given to you? What additional training would you be interested in? Is there anything that could help you do a better job (training, supervisor feedback, co-workers)? Are you involved in any employee development

- activities (trade magazines, trade shows, seminars, trials and experiments, etc.)?
- 7) How would you describe your co-workers? Are you rather similar to each other or rather different?
 - 8) Tell me about a time when a co-worker was not performing like everybody else, what happened? How would you deal with this? If a co-worker is late, absent, what happens? Tell me about the discipline process. If a co-worker has a drug or alcohol problem, what would happen? Is there a policy in place regarding workplace violence or harassment? How do you feel about it? In general, how do you feel about the way problems or conflicts are treated here? Can you think of a situation when a co-worker was fired? What happened? What are other grounds for firing someone?
 - 9) How would you describe your relationship with your supervisor? How does your supervisor let you know that you are doing a good job or where you need to improve?
 - 10) Do you have any input in workplace decisions, e.g., how the work is done? Tell me about a situation where you suggested a change or an improvement? What happened, how was it used (or dealt with if not used)?
 - 11) Can you tell me about the last time when your supervisor wanted you to change some of the work procedures? How were you prepared for these changes?
 - 12) Can you tell me about a situation, when you did not feel comfortable about a task you were asked to do? How did you deal with it? If you would not know how to do a task, what would you do (ask co-worker, ask supervisor etc.)?
 - 13) Tell me about a time when you or a co-worker made a mistake. Did you (s/he) report to the supervisor? How did the supervisor react? If a co-worker made a serious mistake what would you suggest s/he does? Can you tell me about a situation where your supervisor did admit to making a mistake?
 - 14) Did you or any of your co-workers ever have a work accident or any work related health problems? Can you tell me about accident prevention and safety at work?
 - 15) Can you tell me about workplace conflicts with co-workers or supervisors? When you think of the most recent conflict situation, how was that investigated, handled? In general, what are typical sources of conflict? How could conflicts be avoided?
 - 16) Do you know how <name> is doing financially? What do you know about product or

service quality and customer satisfaction? How do you get information about this (newsletters, meetings)?

17) Is there anything else you think I need to know?

18) Do you have any questions for me?

APPENDIX 3

Codes Hierarchy Table for the Business Goals Family

CODES (GOALS)	PRIMARY DOCUMENTS																			Totals
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
Goal	0	0	1	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	4
Who sets goals?	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3
Become OSHA compliant	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Breeding	0	0	0	0	0	1	0	0	0	2	0	2	0	0	0	2	0	0	2	9
Community involvement	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Computerize the farm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Conducive work environment	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	3
Consistent performance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Train employees	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2
Get recognition in community	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
High quality milk	0	0	0	0	0	0	1	0	0	0	0	1	0	0	3	1	0	0	4	10
Increase herd size	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
Increase milk volume	0	0	0	0	0	1	1	0	0	2	0	2	1	0	0	0	0	2	3	12
Inventory control	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Keep cows healthy	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	4
Make money	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Construct new barn	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Reduce calf mortality rate	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	3
Efficient orientation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Trend analysis of performance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Business	0	0	4	0	2	4	2	0	1	2	2	10	2	0	0	2	0	0	0	31
How to achieve goals	0	0	0	0	0	2	3	0	0	8	2	0	1	0	2	1	1	3	5	28
Herdsmen's personal goals	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	2	0	0	4	9
Totals	0	0	6	0	2	12	9	0	1	18	4	18	6	1	6	15	2	7	23	130

APPENDIX 4

Example of a Code Hierarchy for Dairy Farm Business Goals

goal <is> Root

goal, be OSHA compliant <is part of> goal

goal, breeding <is part of> goal

goal, community involvement <is part of> goal

goal, computerize <is part of> goal

goal, conducive environment for employees <is part of> goal

goal, consistent performance <is part of> goal

goal, employee training <is part of> goal

goal, expand the operation <is part of> goal

goal, get recognition <is part of> goal

goal, high milk quality <is part of> goal

goal, increase cow number <is part of> goal

goal, increase quantity of milk <is part of> goal

goal, inventory control <is part of> goal

goal, keep cows healthy <is part of> goal

goal, maintain clean parlor <is part of> goal

goal, make money <is part of> goal

goal, new dairy facility <is part of> goal

goal, reduce calf mortality rate <is part of> goal

goal, reduce mortality rate of cows <is part of> goal

goal, efficient new employee system <is part of> goal

goal, trend analysis <is part of> goal

goal setting, employee not involved <is> Root

goal setting, who is involved? <is> Root

goals, business <is> Root

goals, how to achieve <is> Root

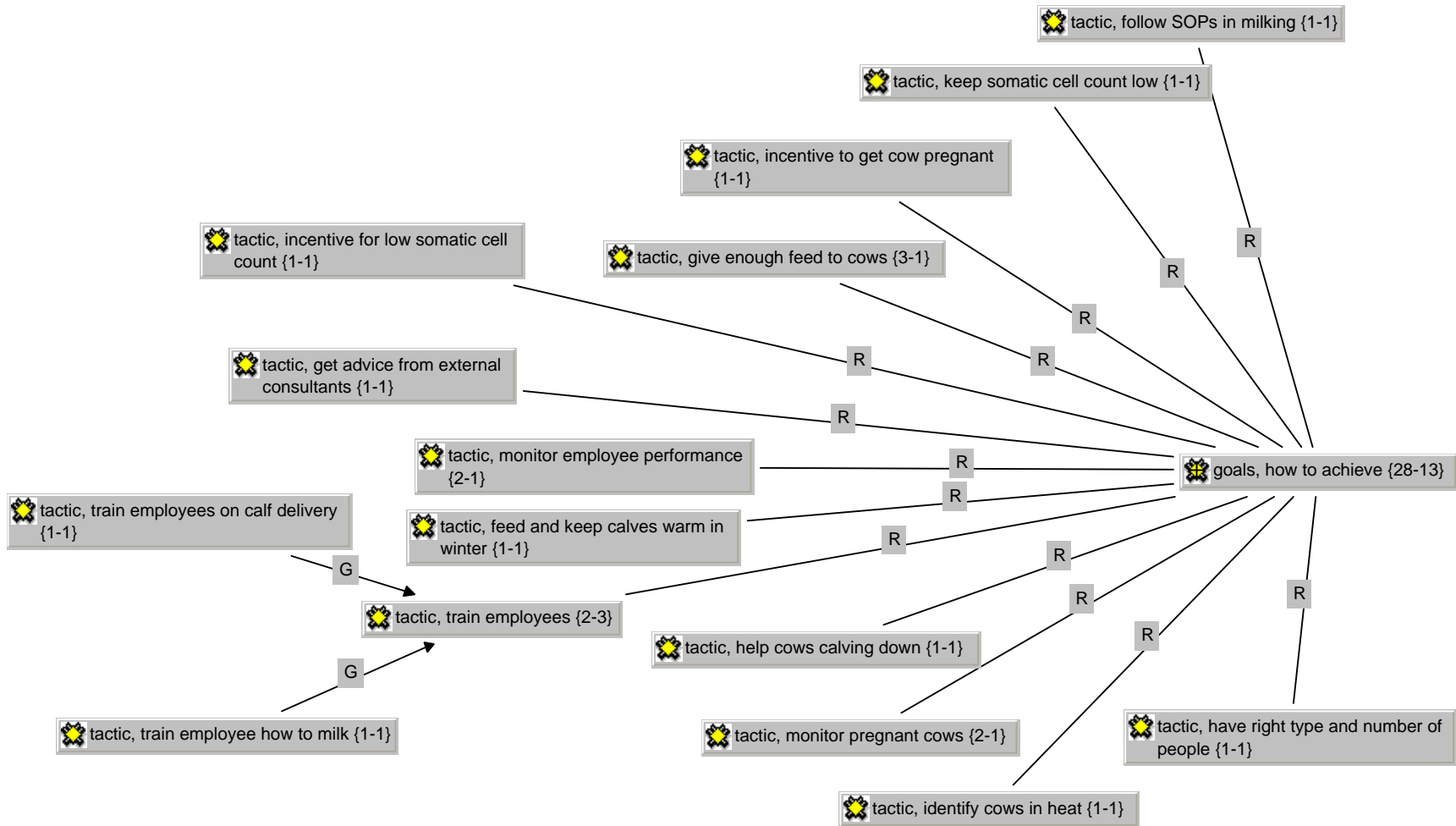
tactic, feed and keep calves warm in winter <is associated with> goals, how to achieve

tactic, follow SOPs in milking <is associated with> goals, how to achieve

tactic, get advice from external consultants <is associated with> goals, how to achieve
tactic, give enough feed to cows <is associated with> goals, how to achieve
tactic, have right type and number of people <is associated with> goals, how to achieve
tactic, help cows calving down <is associated with> goals, how to achieve
tactic, identify cows in heat <is associated with> goals, how to achieve
tactic, incentive for low somatic cell count <is associated with> goals, how to achieve
tactic, incentive to get cow pregnant <is associated with> goals, how to achieve
tactic, keep somatic cell count low <is associated with> goals, how to achieve
tactic, monitor employee performance <is associated with> goals, how to achieve
tactic, monitor pregnant cows <is associated with> goals, how to achieve
tactic, train employees <is associated with> goals, how to achieve
tactic, train employee how to milk <is part of> tactic, train employees
tactic, train employees on calf delivery <is part of> tactic, train employees

APPENDIX 5

Example of a Network of Codes on what Herdsmen perceived to be the Role Non-supervisory Employees in Achieving the Business Goals.



APPENDIX 6

Examples of Dairy Farm Goals

- “Still like to see one more cow pregnant per week. We said we want to get 8, I said I would like to see 9 but we are getting about 7.5. If we can get one more per week we are kind of struggling to that.”
- “When it came to the milk numbers I would like to see a million pounds of milk shipped a month.”
- “We’ve said with the milk quality we like our bacteria count to be premium levels [...] we would like the somatic cells counts to be down below 200,000 and reach a premium level.”
- “For the whole year I think we average like 87, almost 88 pounds a cow, you know, 360, you know, year-round and we decided that we were gonna try to shoot for 90.”
- “Every year we sit down as a team and we set goals and like our new born calves we are trying to keep the percent below 15, I guess the national average is at 15 percent. I kind set a goal of like 10 percent that is death loss to the whole year”
- “In milk [...] my goal would be 100 percent of each tank to be shipped out of here under our farms quality goal.”
- “An overall one would be 75 percent of all cows pregnant by 150 days in milk. Or 40 percent of cows pregnant after the first breeding. 70 percent of cows detected in heat.”
- “My production goals, for milk production I would like that tank to be full everyday. That is, it’s a 6000 gallon taken and right now we are 4000 gallons everyday. So one of my production goals is to fill that tank with milk everyday.”
- “Our main goal is to keep our somatic cell count below 200,000 and its right around 129,000 right now.”
- “Our main goal right now is to try and get the milk quality down to around 90 to 100 thousand somatic count wise and we are very close to achieving that.”
- “My other short-term goal is to, every calf that is born I would like to achieve one month with no calves dying at birth.”

- “That helps in the reproduction of them and also helps to build the herd and more like animals. Really the part of not losing animals goes into our long term goals that are to keep building the herd and get more animals.”
- “We’d like to build some barns and do some things, you know, improve our labor efficiency.
- “I know something like the long-term goals; we’d like to, you know, expand, and get bigger. And short-term goals, you know, just run what we got right now more efficient.”
- “Citizenship in the community is also a goal in our management cycle. Environment is also. Beyond milking cows.”
- “The safety [...] we want to be OSHA compliant I guess to the best of our abilities.”
- “Another goal would be to have a good relationship and create a good place to work for the employees. I place that they would recommend their friends, their families to work here. They would be proud to work here.”
- “I think we gonna, we want to work in the next 2 years probably on getting more consistent on what we are doing in stead of doing really good one day, really bad one day. We have up and down here; we want to be more consistent that we can kind of control it a little bit better.”

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