

Personnel Management Research in Agribusiness

Vera Bitsch

Department of Agricultural, Food, and Resource Economics
Michigan State University, 306 Agriculture Hall, East Lansing, Michigan, 48824
Tel: +517-353-9192, Fax: +517-432-1800, bitsch@msu.edu

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Personnel Management Research in Agribusiness (Executive Summary)

One of the challenges faced by agribusinesses in the 21st century is the attraction, motivation, and retention of sufficient and qualified labor. However, personnel management research has mostly focused on other industries. Accordingly, agribusiness managers have little to rely on, when developing personnel policies and procedures. Once a business has grown beyond the labor capacity of the immediate family, personnel management becomes an issue and practices developed for large corporations do not always scale down well to smaller businesses or may not fit the agribusiness environment.

This paper reviews the foci and results of personnel management research in the United States and in Canada, but results are likely applicable beyond these two countries. The analysis concentrates on publications analyzing personnel management publications, largely excluding labor market, immigration, and similar analyses. The unit of analysis is the business, not the market, society, or other institution. The review covers agribusiness and agricultural economics journals, and also animal science and horticultural science journals. Research reports and conference papers are included when accessible.

With few exceptions, personnel management was virtually absent from agribusiness and agricultural economics research before 1990. Since then research methods cover the full range from in-depth, unstructured interviews and group discussions, through interview or moderator guide based approaches, up to fully structured surveys. Several broadly based results are emerging. First, many agribusiness managers perceive their personnel management competencies as a weakness, in particular during periods of organizational growth. Second, experienced managers typically have an adequate conceptual frame of the personnel management functions, but with respect to the details gaps and misconceptions persist. Third, the peculiar circumstances of agribusiness and farm work require specific skill sets and beginning managers could benefit from targeted training. Fourth, although compensation is important, employees' job satisfaction and retention can be increased with inexpensive measures, such as feedback and appreciation. Fifth, the relationship between personnel management practices and financial success measures is complicated and difficult to assess. Few personnel management studies have been able to provide evidence of a substantial relationship between any particular personnel management practice and profit, or even productivity.

Personnel Management Research in Agribusiness

Problem Statement

One of the challenges faced by many agribusinesses and farms in the 21st century is the attraction, motivation, and retention of sufficient and qualified labor. Although this problem is more pronounced in industrialized and developed economies, growing and transitional economies, including China, also face a lack of interest in agricultural work. In addition, personnel management research has mostly focused on other industries, neglecting agribusiness. Accordingly, agribusiness managers have little to rely on, when developing personnel policies and procedures for a growing business. Once a business has grown beyond the labor capacity of the immediate family, personnel management becomes an issue and practices developed for large corporations often times do not scale down well to smaller businesses or may not fit the agricultural or agribusiness environment.

Farm Labor in the U.S.

In 2007, U.S. hired farm labor comprised \$21.9 billion or 9.1% of total production expenses. That was an increase in monetary expenses of \$3.3 billion, compared to \$18.6 billion in 2002, but a decrease in percentage of expenses. In addition, contract labor amounted to \$4.5 billion in expenses or 1.9% of total production expenses, up \$1.1 billion from 2002. Custom work and custom hauling, which includes machinery costs was up by \$0.8 billion at \$4.1 billion; 1.7% of total production expenses (2007 Census of Agriculture). Hired labor was the third largest expense group behind purchased feed and purchased livestock and poultry. But farm labor expenses are not equally distributed regionally. According to Kandel, total farm labor expenses amounted to 22.3% of the cash receipts in California, but only to 2.5% in Iowa in 2006. The top five states in terms of payroll expenses were California, Florida, Texas, Washington, and Oregon. They account for 42.8% of the expenditure on hired labor in the U.S.

Runyan reported that 1910-19 the share of family labor of total farm employment was 75%; 1990-99 this share had declined to 64%. While total farm employment is declining, the role of hired workers is increasing with increasing farm sizes. However, farm wages rank near the bottom of all occupational groups, second only to private household work (Runyan). This fact may be ameliorated, at least in part, by lower cost of living expenses in rural communities (Gisser and Davila). By agricultural specialization, hired labor is most important for horticultural

operations (tree nurseries, ornamentals, fruit, and vegetables) and in dairy farming, followed by livestock and poultry farming; hired labor is least important in field crops.

Objectives

This paper reviews the foci and results of personnel management research in agriculture and agribusiness in the United States and in Canada, but results are likely applicable beyond these two countries. The goal of the review is to extract the lessons learned and derive guidance for both agribusiness management practice and future research. The specific objectives are to (1) analyze the state of the art of personnel management research in agribusiness, in particular agricultural production, including an analysis of research methods; (2) determine the main themes with respect to (a) research questions and (b) empirical fields; and (3) summarize empirical results to (a) provide a foundation for manager training and decision support and (b) serve as a roadmap to future research projects.

Procedures

Geographically, this paper focuses on the United States and Canada and the review is limited to publications in English. The analysis concentrates on publications analyzing personnel management questions, largely excluding labor market, migration, immigration, and similar analyses. Labor market, migration, and immigration studies are important to understanding the agricultural labor problem and a considerable amount of work has been done on these questions (see, e.g., Devadoss and Luckstead; Ise and Perloff; Martin and Taylor; Taylor; Tran and Perloff; Walters, Emerson, and Iwai). Less work has been published on personnel management functions and the use of different management practices in agribusiness.

Personnel management functions include practices to recruit, train, manage, organize, evaluate, compensate, discipline, and terminate employees, as well as, questions of job satisfaction, motivation, and retention. Therefore, the unit of analysis is the agribusiness or farm, not the market, society, or other macro institution. The review covers agribusiness and management journals, agricultural economics journals, and also animal science and horticultural science journals. In addition, research reports and conference papers (gray publications) are included when accessible and relevant.

Articles reporting on empirical research, as well as, review articles were content analyzed with respect to the objectives outlined above. A qualitative analysis method was used to determine the personnel management questions addressed, the research methods, the empirical field, the specific results with respect to the questions addressed, and the broader implications of each article. Only articles meeting the criteria summarized above are included in the discussion of the main themes and in the summary tables. Furthermore, although this paper is based on a comprehensive review, it cannot claim to include every study in this field.

State of the Art

Before 1990, personnel management was virtually absent from agribusiness and agricultural economics research (Howard and McEwan; Rosenberg and Cowen), with very few exceptions (e.g., Adams, How, and Larson). For the agricultural field, personnel management research basically began in the early 1990ies, but many of these studies are difficult to access, because they have been published as conference or working papers, or in trade magazines, not in peer reviewed journals. Until the end of the 1990ies, studies remain few and common themes are yet to develop, with the possible exception of job attitudes, which appear as an early focus (e.g., Adams, How, and Larson). Additional themes emerging later include managers' conceptualization of the personnel management functions, managers' personnel management competencies and practices, and the relationship between personnel management practices and organizational outcomes.

Few studies focus on one particular personnel management function; more studies encompass a broad array of functions and the related management practices. Exceptions are studies of the management and preferences of migrant workers and of compensation (table 1). Compensation studies in agribusiness frequently are limited to a description of actual wages and their distribution, sometimes not including benefits, and not relating compensation to organizational outcome variables (see, e.g., studies cited in Maloney and Milligan). Examples of compensation studies, which transcend this limitation, are a pay method and performance study (Billikopf and Norton), a study of the effect of compensation and working conditions on retention (Gabbard and Perloff), and studies of the relationship between wage, production technologies, and farm size (Hurley, Kliebenstein, and Orazem; Yu et al.). Gabbard and Perloff found that for the same monetary investment employee benefits increase the probability of retaining good workers more

than higher wages. Strohlic et al. also found benefits to increase retention. No relationship between wages and retention rates was found by Miklavcic, as well as Strohlic et al.

Considering that, regardless of the personnel management model used (see Delery and Doty for the universalistic, contingency, and configuration models), specific management practices cannot be considered to function in isolation and independent of other practices. Conclusions based on such studies of singular practices would be limited. Therefore, even researchers interested in a particular personnel management function and in comparing relevant practices for this function, would have to take a more integrative approach and describe other practices to provide context. Empirical evidence for the relevance of the integrative approach in agriculture and agribusiness was provided in Adams, How, and Larson; Chacko, Wacker, and Asar; and Mugera and Bitsch.

Despite many commonalities between different branches of agricultural production, the type and conditions of work vary, as does the dependency on weather and growth cycles, e.g., comparing vegetable production to swine production. Both researchers and practitioners therefore will primarily look at the research matching their current undertaking most closely. Studies vary in their empirical coverage, with respect to the scope of farming specializations included, from studies focused on a single specialization (e.g., floriculture) to studies including multiple specializations (e.g., horticulture, including floriculture, fruit and vegetable production), and the scope of personnel management functions analyzed, from single function studies (e.g., compensation; see above) to studies including selected or multiple functions (table 1). Dairy farming stands out as the specialization most likely to be researched. Given that hired labor plays an even larger role in horticultural production than in dairy farming, the reasons for the higher interest in personnel management in dairy research are not obvious.

The *Journal of Dairy Science* published papers of a *Symposium: Dairy Personnel Management* as early as 1993. In addition to the dairy studies reported in table 1 that address personnel management specifically other studies of dairy farming included personnel management questions in broader studies of farm expansion (Bewley, Palmer, and Jackson-Smith; Hadley, Harsh, and Wolf; Stahl et al.). These studies found that personnel management competencies are most important for the success of farm expansion, but these competencies are also most challenging for farm managers. After an expansion, managers are more likely to use formal practices with respect to all major personnel management functions (Stahl et al.), but some

problems, such as communication, persist (Hadley et al.), although managers spend more time on personnel management. Also, personnel management education for large dairy farms has been emphasized as an opportunity for extension programming (Brasier et al.).

A relatively new arena of research, which cuts across different agricultural specializations, is the interface of personal management and sustainable or organic production. The questions being asked include whether sustainable and organic agriculture are inherently beneficial to employees, whether the commitment to sustainability does or should include a social component, and whether a fair labor certification approach would be beneficial to producers (e.g., Shreck, Getz, and Feenstra; Strohlic and Hamerschlag; Strohlic et al.). Although a majority of certified organic farmers in California believe that organic agriculture is more socially sustainable than conventional agriculture, there is little support to include criteria on working conditions in the organic certification (Shreck, Getz, and Feenstra). On the other hand, Strohlic et al. found considerable interest in a fair labor certification (59% of respondents).

Research Methods of Empirical Studies

Considering the early stage of personnel management research in agribusiness, research methods were expected to be mostly exploratory and qualitative (Bitsch 2000 and 2005). However, research methods cover the full range from in-depth, unstructured interviews and group discussions, through interview or moderator guide based approaches, up to fully structured surveys administered at the business site or off-site one-on-one or in a group setting, over the phone, or mailed questionnaires (table 2). Fornaciari and Dean found a similar phenomenon in the study of religion, spirituality, and management, where research methods also include many quantitative approaches, despite the early stage of the research field. Reasons for the seemingly early venture into highly structured and quantitative research approaches are more likely to be caused by expectations set up in the qualification process of researchers, professional pressures regarding publication outlets, and differing prestige of certain research approaches in researchers' professional fields than by research considerations.

Although, this review of studies of personnel management in production agriculture and agribusiness cannot claim completeness, the number of studies employing unstructured or moderately structured methods (first two columns in table 2) appears lower than the number of studies employing highly or very highly structured methods (last two columns in table 2).

However, even many of the quantitative, highly structured studies did not attempt (or accomplish) representative sampling and, therefore, their generalizability can only be judged based on their descriptions of the research approaches and the methods used, and the comparison of results across studies. As a result, researchers and practitioners planning to use studies of either research approach may need to analyze the original sources and pay close attention to details, before evaluating the applicability of their results to a different context.

Most studies rely on a single method for data collection and multi-method studies are rare. An exception is the case study approach of best management practices by Strohlic and Hamerschlag that employed a variety of methods including semi-structured interviews with farm managers, focus groups with employees, and informal interviews with key informants. Multi-method approaches are likely to yield more valid results, due to the method triangulation involved.

The method used most often by personnel management researchers in production agriculture and agribusiness is a survey questionnaire (table 2). Questionnaires are administered in a variety of ways, most frequently in person, which is more likely to garner reliable results than mailed questionnaires, given the sensitivity of many personnel management questions, but also requires more resources. The number of studies using a mailed questionnaire is surprisingly high, considering the difficulty of developing a questionnaire that is fully understood by potential research participants. Other methods used frequently are moderately structured interviews either in an individual setting or set up as group discussions. Although resource intensive, these latter approaches are more likely to gather reliable data and allow for in-depth study of research questions than the more highly structured approaches, given the early stage of the field, the lack of common understanding of personnel management terms of potential research participants and researchers, and the multitude of interactions between personnel management practices.

Managers' Conceptualization of Personnel Management Functions

As early as 1967, Adams, How, and Larson observed that some farmers seem to have much fewer difficulties in finding and keeping the workforce they needed than other farmers in a comparable situation. Their research showed that this difference was not a chance occurrence, but that these farmers had invested considerably in the relationships with their workforce and carefully developed their personnel management practices. Similarly, Rosenberg and Cowen

found dairy managers' assumptions about their workforce to correlate with their milk output, and suggest that those assumptions guide the choice of organizational structure and the management practices. Hence, it may be concluded that managers' perception of which personnel management functions need to be given attention and which practices are available to them, will be the determinants of their management choices.

After 2000, a renewed effort to delineate the field of agricultural personnel management resulted in three studies using focus group discussions to identify management practices in different areas of agricultural production and services, to describe their advantages and drawbacks from managers' perspective and to critically review these practices. As a research method, focus group discussions are useful to integrate research and extension goals. The interaction between research participants and between research participants and the researchers triggers learning processes. In addition, relationships are developed and reinforced, which not only increase openness during the research process, but encourage participation in educational programs. During the research process, knowledge deficits can be diagnosed (Bitsch 2004).

Bitsch und Harsh convened five focus groups with managers and owners of greenhouses, tree nursery operations, and landscape operations in Michigan. The study showed that horticultural managers conceptualize personnel management and its challenges and opportunities along the management process: recruiting and selection, training and development, performance appraisal and discipline, careers and relationships, and compensation. For the research participants, hiring immigrants and labor legislation were also important HRM topics.

In addition, Bitsch et al. convened four focus groups with dairy farmers and managers. Their perceptions of personnel management functions were similar to the horticultural study, and differences were mostly due to the more seasonal character of labor needs in the earlier study. Discipline was more important in dairy farming, because the continuous availability of work creates the need for terminating and replacing some employees who do not perform at the expected level. Seasonal operations often deal with these employees by providing less work to them, laying them off before the end of the season, and not recalling them for the following season. While horticultural managers considered working conditions mostly as an image problem in recruiting, to dairy managers working conditions were a permanent stress on employees.

Labor laws and regulations were less important in dairy farming, because few operations had their practices audited by government agencies at the time of the study.

Finally, Bitsch and Olynk (2008) convened six focus groups with owners and managers of pork farms in Kansas and Michigan and reanalyzed the transcripts of the second study. Results of this study served to refine the framework of agricultural personnel management developed based on the first two studies. The most significant extension is an additional set of personnel management practices regarding the performance management function. Performance management describes the daily, informal interaction between managers and employees, including informal feedback, task-related communication, setting priorities, and dealing with problems. Although these practices are important in the day-to-day management processes, there has been little discussion about them in the literature. Also, working conditions were extended to include the organizational structure, and the social environment at work was established as another arena to be monitored and consciously managed. The resulting framework of agricultural personnel management includes eleven management functions: recruiting, selection, hiring immigrant employees, training, working conditions and organizational structure, social environment, performance management, discipline, performance appraisal, compensation, and labor law and regulation.

Managers' Personnel Management Competencies and Practices

In a recent study, Stup, Holden, and Hyde identified competencies in different management areas on the senior and the middle management level of dairy farms through group discussions and then surveyed different managers about their comfort level with respect to these competencies. While managers were generally confident about their competencies, senior managers were least confident about their personnel management competencies (4.95 on a 7-point Likert scale, 1=very low, 7=very high, n=41). Middle managers ranked themselves second lowest in personnel management competencies (4.41, n=22) and lowest in community service and public relations (4.05, n=20).

Bitsch and Olynk (2007) developed a typology of required personnel management skills for successful management in animal agriculture based on ten focus groups with dairy and pork farmers and managers. The typology consists of five skill sets: motivator, housekeeper, model employee, counselor, and change agent. This typology shows a number of commonalities with

the Competing Values Framework, used in general management education (Faerman, Quinn, and Thompson), but also industry specific differences. The motivator with the ability to train and motivate others, and to provide constructive feedback and the housekeeper with the ability to control, to lead, and to discipline others build the core of agricultural personnel management skills and also likely other production enterprises. In addition, the ability and willingness to be a model employee plays a surprisingly large role in agriculture. The function of the counselor, to support employees with their personal problems at work and beyond, was discussed less frequently by the research participants, but is necessary to prevent problems and to sustain employee productivity. The change agent initiates or implements innovations in the production process and was mentioned mostly by managers of larger farms. The authors point out that to be successful managers need to command a complete repertoire of skills including skills from each of the five types and not limit themselves to skills from only one type, for example, out of familiarity with certain behaviors (Hutt and Hutt).

The role and the functions of middle management are a field of agricultural personnel management with few studies, but increasing importance. Not only did the share and impact of hired labor increase with increasing farm sizes, and personnel management became more important, but supervisors and middle managers are also playing a larger role. Billikopf (2001) interviewed farm supervisors in California and found them to struggle with personnel management tasks. Bitsch and Yakura employed a case study approach to develop a grounded theory of agricultural middle management (see Bitsch 2005, on grounded theory applications in agribusiness; see Glaser and Strauss on the foundations of grounded theory).

The participating middle managers described an unexpectedly large number of different personnel management practices. Bitsch and Yakura suggested that these practices can be clustered into two basic types: traditional practices and participative practices. Traditional practices include reprimanding employees, orienting and training employees, monitoring and controlling employees, and dealing with conflict. Participative practices include accommodating employees (e.g., flexibility in schedules, task and team assignments), managing relationships with employees, providing information and goal setting, listening to employees, providing appreciation and feedback, rewarding employees (non monetary), modeling work behavior, peer control, manager-induced team building, and training by coworkers.

Although this typology shows similarities with McGregor's Theory X and Y, Bitsch and Yakura underline a significant difference. For the participating middle managers, using traditional or participative practices was not correlated with individuals. Each manager used both traditional, as well as, participative practices. The authors suggest that management success corresponds rather with the number of practices individual managers command than with the type of practices they use more frequently. McGregor had assumed that participative managers would be more successful. Bitsch and Yakura pointed out that some managers did use few practices, whereas others were using the full breadth of the described practices. Given that day-to-day management consists of many different management situations, managers with a more complete repertoire are more likely to choose suitable practices.

Employees' Job Attitudes and Job Satisfaction

Job satisfaction is considered both a goal in itself, as well as, a means to reduce turnover and increase motivation and performance. Although meta-studies found a smaller relationship between job satisfaction and these correlates than expected, several studies of job satisfaction in agriculture have been conducted during the past 50 years (see Bitsch and Hogberg). One of the more frequently applied models is the empirically grounded two-factor model by Herzberg et al. This model is particularly suited to structure the analysis of job attitudes and their context. Empirical evidence that indeed job satisfaction and job dissatisfaction are caused differently as predicted by the Herzberg et al. model is scant (Bitsch 2007).

Independent of the theoretical models and the research methods several common results emerge from studies of job attitudes in agriculture. Porter pointed out that half of the dairy farm employees surveyed in New Hampshire saw appreciation of their work as the most important factor for their performance. In addition, they mentioned open communication with their supervisor, good records, and control of the work situation; Porter concluded that financial incentives are less important. Adams, How, and Larson found financial incentives to be important for a satisfactory employer-employee relationships, but stressed the importance of consideration for workers as human beings, taking into account personal problems of workers and helping to find solutions, and getting the right fit of worker and job (see previous section for middle managers' practices for a similar finding). Bitsch (1996) in a study of tree nursery apprentices in Germany found that a large majority did desire higher wages, but almost half also

desired increased appreciation, more training, and more responsibility for their tasks. More training was also requested by Spanish speaking dairy farm employees surveyed by Maloney and Grusenmeyer in New York. Surveying New York dairy farms, Fogleman et al. found that employees were least satisfied with the factor managers had most control over, that is performance feedback.

Billikopf (2001) had found supervisors in all branches of agriculture to be mostly satisfied with their jobs. More detailed case studies with horticultural operations found for employees without supervisory responsibilities (Bitsch and Hogberg) and also for supervisors (Bitsch 2007) that the same factors seem to contribute to job satisfaction, as well as, to dissatisfaction, depending on their availability and characteristics. For both groups of employees, job security, achievement, technical competency of the superior, and personal relationships at the workplace were more likely to be perceived as positive. The work itself and organizational procedures and policies were perceived as ambiguous, contributing to both satisfaction and dissatisfaction. Compensation was perceived rather negative, more negative by employees without supervisory responsibilities than by supervisors; the latter are likely to be higher paid and more likely to receive benefits. Employees without supervisory responsibility perceived their work/life balance more positive than supervisors; the latter are also less satisfied with their working conditions. Mainly, this was due to the fact that employees with supervisory responsibilities were expected to be available for work whenever required, whereas employees without supervisory responsibilities were given more flexibility. An earlier study in Germany, also had found that horticultural employees value flexible scheduling and benefit arrangements (Bitsch, Bromm, and Schalich).

Relationships between Personnel Management Practices and Organizational Outcomes

Relationships between personnel management practices and various organizational outcomes, such as productivity (Rosenberg and Cowen), profit (Adams, How, and Larson), or competitiveness (Chacko, Walker, and Asar; Mugera and Bitsch) have often been assumed, but infrequently been empirically researched. Owners and managers of agricultural operations also testify to a relationship between personnel management practices and farm level outcomes (Bitsch et al.; Strohlic and Hamerschlag). The few studies attempting the empirical description and measurement of these relationships in production agriculture and agribusiness have found limited evidence.

Rosenberg and Cowen tested several personnel management practices' and management assumptions' impact on dairy farm productivity, including prevalence of Theory Y assumptions (McGregor), upward and downward responsibility diffusion, employee selection procedure, employee assessment criteria, and employee performance feedback, along with record use and herd size. In addition to record use, the authors found that Theory Y assumptions and the amount of feedback provided to employees impacted productivity. Feedback has also been found to be important in employees' job satisfaction (Bitsch 1996; Fogleman et al.). Although management assumptions are likely to guide organizational structure, personnel management practice choice, and managers' communication and interaction with employees, the study did not provide evidence of the relationship between assumptions and particular practices.

Stup, Hyde, and Holden analyzed several personnel management practices of successful dairy farms in Pennsylvania, including milk quality incentives, performance reviews, employment of Spanish-speaking employees, use of standard operating procedures for milking, feeding, and reproduction tasks, continuing training, and use of job descriptions. Except for continuous training of employees, farm success did not differ significantly for farms using compared to farms not using these practices. While differences in definitions between Stup, Hyde, and Holden, and Rosenberg and Cowen and little overlap regarding the management practices researched, make it difficult to compare both studies, it should be noted that Stup, Hyde, and Holden did not find performance reviews to be significant.

Chacko, Wacker, and Asar compared perceptions of agribusiness managers with respect to the contributions of different technological and personnel management practices to their competitiveness. In general, managers ranked technological practices higher than personnel management practices. However, job security and measures of training and development were among the top ranked management practices. Job security has also been emphasized in job satisfaction studies (Bitsch and Hogberg; Bitsch 2007). Training has been found to stand out in Stup, Hyde, and Holden and has also been emphasized in job attitude studies (Bitsch 1996; Maloney and Grusenmeyer).

Based on managers' perception of particular technological and personnel management practices, Chacko, Wacker, and Asar also aggregated practices in a factor analysis and regressed these factors on perceived competitiveness. The regression analysis showed personnel management

factors to contribute to a higher extent to different measures of competitiveness than technological measures. The employee commitment factor (job security, sharing of profits and gains) stood out as contributing to most competitiveness measures.

Mugera and Bitsch used a resource based perspective to analyze whether personnel management practices and the personnel itself constitute a competitive advantage for dairy farms (see Wright et al. for a general discussion of the application of the resource based theory to personnel management). The authors conducted case studies with dairy farms to analyze the integration of personnel management practices with each other (e.g., practices regarding recruitment, selection, training, and compensation) and their outcomes (e.g., voluntary turnover and termination). The case studies provided empirical examples of the applicability of the resource based theory and evidence of the use of personnel management practices as a competitive advantage. The authors emphasize that studies of isolated management practices may lead to misleading results, due to the importance of the integration of practices with each other. Therefore, they recommend an integrative approach to researching and changing personnel management functions.

Strochlic et al. surveyed 300 organic farms of various agricultural specializations with respect to their personnel management practices and organizational outcomes. They found significant relationships between an overall labor conditions score and 5- and 10-year retention rates, several occupational safety related practices and person-days lost due to accidents and injuries. No relationship was found between the surveyed management practices and supervisory costs or access to sufficient labor.

Conclusions

Personnel management research in agribusiness has increased over the past 20 years, but the field is in an early stage of its development. Although agribusiness managers and organizations are demanding more decision support and training in personnel management, a rapid increase in research volume cannot be expected. The number of researchers giving this field more than cursory attention is relatively small compared to other agribusiness fields. Research funding is limited or unavailable for many agribusiness related personnel management questions. Peer reviewed articles are rare, because publication outlets lack sensible reviewers for this field and many editors do not perceive it as a priority.

Notwithstanding the early stage of personnel management research in agribusiness, several broadly based results are emerging. First, many managers on different hierarchical levels perceive their personnel management skills as an area of weakness. This weakness becomes more visible during organizational growth, when additional employees are needed and tasks change from production orientation to management, including management of more personnel. Growth processes have been researched mainly in dairy farming. Despite managers' perception of a lack of personnel management competencies, participation rates in educational programs targeting such skills are not very high.

Second, experienced managers typically have an adequate conceptual frame of the personnel management functions, and potential challenges and risks, at least regarding the big picture. They acknowledge all textbook personnel management functions (recruiting, selection, training, performance appraisal, compensation, discipline, and labor law and regulation), although they do not necessarily practice conscientious management with respect to all of these functions. For example, performance evaluation and discipline are rarely practiced. Also, gaps and misconceptions persist with respect to the details of each practice and potential alternative practices, and typically the details decide the success of these practices. On the other hand, managers perceive a need for additional practices, rarely discussed in the literature, with respect to performance management, the social environment at the workplace, working conditions and organizational structure, as well as, hiring immigrant employees.

Third, not only are the personnel management tasks outlined above numerous and often times difficult to balance, but they also result in challenging requirements with respect to the breadth and depth of management competencies and practices. Due to the peculiar circumstances of agricultural work, including long hours and family relationships, requirements of managers are not less stringent, but rather more demanding than in other sectors. Various new and unexpected tasks need to be mastered by newly promoted individuals who normally are not prepared to deal with these tasks. Learning management in agriculture is often limited to imitating the supervisor (Hutt and Hutt) and training in many cases consists of "sink or swim" (Bitsch and Yakura). Many farms could improve their HRM practices through preparatory and accompanying training of their supervisors and managers. On the other hand, given their lack of training, managers have acquired and are using a surprisingly large number of traditional, as well as non traditional, HRM practices.

Fourth, compensation is important, as can be expected, considering the low level of agricultural wages compared to other occupational groups. However, incentive systems are not necessarily preferred by employees (Porter; Strohlic and Hamerschlag). In many cases, job satisfaction can be increased with inexpensive measures, such as providing more feedback and appreciation for tasks well done. Similarly, many farms could use training and employee responsibility for task performance to increase productivity and job satisfaction. On the other hand, in general, employees seem satisfied with their work and specifically with its context. Flexibility, especially for employees without supervisory responsibility, and positive personal relationships at work, particularly with superiors, contribute primarily to job satisfaction. As Adam, How, and Larson stated, "Such relationships seem to be the end result of a combination of policies and practices on the part of farmers and of a genuine liking of farm work and their employers on the part of employees" (p. 60).

Fifth, the relationship between personnel management practices and financial measures of organizational success is complex and difficult to assess. Few personnel management studies in production agriculture and agribusiness have been able to provide evidence of a substantial relationship between any particular personnel management practice and profit, or even productivity. In particular, isolated practices do not usually show a statistical relationship with financial measures or even intermediate measures, such as productivity, retention, or supervision costs. Although this is to be expected according to the integrative model of personnel management, it hinders the development of manageable research projects that can be analyzed and described in a standard form. Additional problems stem from the lack of data availability and changing conditions and actors who also continuously develop new practices and strategies.

Compared to twenty years ago, when Howard and McEwan declared the absence of personnel management research in the agribusiness field, managers and researchers have more to build on today. A suitable framework of personnel management functions in production agriculture has been developed (Bitsch and Olynk 2008), on which manager training and future research can build. This framework must be broadened to encompass the agribusiness value chain as a whole. Groundwork has been done to describe and conceptualize what managers do in their day-to-day practice to motivate and lead employees, and which competencies they need to acquire to be or become successful managers of personnel. In addition, a lot more is known about how

agricultural employees perceive their work and its context and where they see improvement needs. Nevertheless, differences and commonalities between production agriculture and the broader agribusiness environment need to be explored further. Also, future research will have to develop methods to establish the relationship between personnel management practices and organizational outcomes and to analyze specific practices in their organizational context more in-depth.

Education and training of production agriculture and agribusiness managers, both in the classroom and beyond, can and has started to build on a growing body of empirical research, instead of solely relying on results from other industries and large organizations, which may or may not be applicable in the industry settings. Specific results from many of the studies discussed have been used to develop personnel management programs for managers in production agriculture, both in terms of determining educational needs, as well as developing and organizing program content tailored to managers' experience and understanding. A consequence of the availability of more suitable education and training programs is more conscientious and improved practical decision making with respect to personnel management. The lack of definitive empirical evidence notwithstanding, improved decision making in this important management arena is expected to lead to higher productivity and profits, and also better quality of life for managers, as well as employees.

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Table 1. Scope of Personnel Management Studies and Personnel Management Functions Analyzed in Production Agriculture and Agribusiness

	Studies Focused on One Farm Specialization	Studies Encompassing Multiple Farm Specializations
Studies Focused on One or Few Personnel Management Function(s)	<u>Dairy</u> Immigrant employees Harrison et al.; Maloney; Maloney and Grusenmeyer; Stup and Maloney <u>Floriculture</u> Recruiting and selection Maloney, Milligan, and Petracek <u>Swine</u> Compensation Hurley, Kliebenstein, and Orazem; Yu et al. <u>Vineyards</u> Compensation Billikopf and Norton	<u>Horticulture</u> ^{a)} Compensation Billikopf (1995 and 1996) Compensation and working conditions Dunn; Gabbard and Perloff
Studies Encompassing Selected or Many Personnel Management Functions	<u>Dairy</u> Bitsch et al.; Fogleman et al.; Hutt; Hutt and Hutt; Muger und Bitsch; Porter; Rosenberg and Cowen; Stup, Holden, and Hyde; Stup, Hyde, and Holden <u>Swine</u> Howard et al. <u>Floriculture/Greenhouse</u> Bitsch, Bromm, and Schlich Maloney and Milligan <u>Tree nursery production</u> Bitsch (1996)	<u>Horticulture</u> ^{a)} Bitsch (2004); Bitsch (2007); Bitsch and Harsh; Bitsch and Hogberg; Bitsch and Yakura; Miklavcic; Strohlic and Hamerschlag <u>Livestock</u> ^{b)} Bitsch and Olynk (2007 and 2008) <u>Agriculture</u> ^{c)} Adams, How, and Larson; Billikopf (2001); Chacko, Wacker, and Asar; Howard; Rosenberg, Perloff, and Pradhan; Strohlic et al.

^{a)} Horticulture indicates two of more of the following specializations: floriculture and greenhouse, fruit, nuts, vegetable, and vineyard production.

^{b)} Livestock indicates two of more of the following specializations: dairy, beef, swine, and poultry production.

^{c)} Agriculture includes at least one horticultural and one livestock specialization, as well as agribusiness.

Table 2. Degree of Structure of Research Approaches and Methods Used in Personnel Management Research in Production Agriculture and Agribusiness

	Unstructured or Little Structure	Moderately Structured	Highly Structured	Very Highly Structured
Individual Methods	Unstructured interviewing	Interview schedule	Administered questionnaires	Mailed questionnaire
Examples	Billikopf (2001) ^a ; Hutt ^a ; Hutt and Hutt ^a ; Strohlic and Hamerschlag	Adams, How, and Larson; Bitsch (2007); Bitsch and Hogberg; Bitsch and Yakura; Howard; Muger and Bitsch; Porter; Strohlic and Hamerschlag	At the work site: Billikopf (1995 and 1996); Bitsch, Bromm, and Schalich; Fogleman et al.; Howard et al.; Maloney and Grusenmeyer; Rosenberg and Cowen; Stup, Hyde, and Holden At a housing site: Dunn Over the phone: Billikopf (1996); Maloney; Maloney and Milligan; Maloney, Milligan, and Petracek; Strohlic et al.	Billikopf and Norton; Chacko, Wacker, and Asar; Hurley, Kliebenstein, and Orazem; Miklavcic; Rosenberg, Perloff, and Pradhan; Stup, Holden, and Hyde; Yu et al. Secondary data analysis: Gabbard and Perloff
Group Methods	Unmoderated group discussion	Moderated group discussion	Questionnaire administered to individuals in a group setting	
Examples	Stup and Maloney	Bitsch (2004); Bitsch and Harsh; Bitsch and Olynk (2007 and 2008); Bitsch et al.; Harrison et al.; Howard; Stup, Holden, and Hyde; Strohlic and Hamerschlag	At school sites: Bitsch (1996)	

^a Studies where the method was not described sufficiently to categorize by the level of structure were categorized as unstructured.