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Employee Retention:
Components of Job Satisfaction of Green Industry Employees

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Abstract

Fourteen businesses participated in case studies of labor management practices. Fifteen non-supervisory employee interviews were analyzed regarding components of job satisfaction. Components were family values, achievement, recognition, work itself, involvement, personal life, interpersonal relationships, job security, supervision, working conditions, organization, safety, compensation and information.

Introduction

About 31% of agricultural work in the U.S. is done by hired labor. In 1997, American farmers spent over \$14.8 billion on hired labor. U.S. wide greenhouses and nurseries lead agriculture in expenses for hired labor with \$3.8 billion in 1997 (USDA). Hired labor is paramount to many farms' success, and its significance is increasing with growing farm sizes. However, the competitive position of agriculture on the labor market is constrained by image problems of agriculture and the agricultural workplace, and limited management training of managers and supervisors. This has led to concerns that labor retention and labor productivity are not at optimum levels, resulting in high turnover, depressed profits and low farm wages.

Job satisfaction is a general attitude toward an individual's current job and organization that encompasses the feelings, beliefs, and thoughts about that job. Job satisfaction is possibly the most studied attitude in organizational behavior (Cranny et al., 1992). Most people believe that job satisfaction is closely associated with performance and numerous other important work behaviors, including absenteeism, turnover, and organizational citizenship behavior. In addition, job satisfaction has major consequences, not only for the employee's wellbeing and health, but also for coworkers, work groups, and managers.

While there is evidence for the relationships between job satisfaction and health and wellbeing, the enormous body of research does not show a close relationship between job satisfaction and behavioral variables (Locke, 1976; Fisher and Locke, 1992). Reasons for these relationships being difficult to research are the complexity of interaction between attitudes, other psychological factors, organizational and personal context variables and behavioral variables. Even with relationships being weaker than expected, employees' job satisfaction is both a goal in itself and a proxy for an organization's capacity to retain and motivate its employees.

This paper analyses job satisfaction of current agricultural employees, as an outcome variable which agricultural employers seek to influence through management practices and supervisory behavior. The analysis follows the theory of motivation and job satisfaction by Herzberg et al. (1959). Job satisfaction has been studied in many different ways and theories on job satisfaction are numerous, including theories of motivation and organizational behavior that have been interpreted as theories of job satisfaction in various empirical studies (for a historical overview see Locke, 1976, for a more recent discussion see Cranny et al., 1992).

In the practice of and consulting on human resource management the Herzberg et al. model has been very influential and underlies many current management guidelines. An example is the ranking of job factors study by Niebrugge (1992). This study compares employees and employers ranking of the importance of different job factors (interesting work, appreciation and recognition, feeling 'in on things,' job security, good wages, promotion/growth, good working conditions, personal loyalty, tactful discipline, and sympathetic help with problems) and points out a gap in perspectives between employees

and employers. The study and resulting recommendations are broadly referenced in internet-based management tools (e.g., www.uschamber.com/sb, www.toolkit.cch.com, www.hrtools.com, www.itssimple.biz, www.amsouth.com/smallbusiness). It is also cited in change initiatives by public bodies, e.g., by the U.S. Department of Defense (www.dod.mil/comptroller/bmmp/pager/transition_plan.html) and the Capital Region Economy Advanced Technology Employment (CREATE) Report for British Columbia (Canada) (www.viatec.ca/create) and in agricultural extension publications (e.g., Bolinger, 2000).

Studies of agricultural employees' job satisfaction are rare. An early analysis of county extension administrators was based on the Herzberg et al. model and results supported it (Clegg, 1963). Another study loosely based on the Herzberg et al. concept analyzes job satisfaction of horticultural apprentices (Bitsch, 1996). Other agricultural studies have either not pointed out a specific theoretical background (Billikopf, 2001; Howard, 1991) or have been informed by motivational models, such as Lawler (1973) (e.g., Fogleman et al., 1999) or Vroom (1994) (e.g., Darboe, 2003).

Based on a review of the state of research at the time, Herzberg et al. devised a study of work attitudes to test the assumption that job satisfaction and job dissatisfaction are not two extremes of a continuum but are caused by different underlying job factors and cannot substitute for each other for practical purposes. Their original study used the critical incident method of data collection, which is a semi-structured, open-ended interview technique. Research participants were asked for both, a time when they felt particularly good about their job and what events were involved and what outcomes resulted and a time when they felt particularly bad about their job. Herzberg et al.

developed a coding scheme of sixteen factors for the analysis of their interviews: recognition, achievement, possibility of growth, advancement, salary, interpersonal relations-superior, interpersonal relations-subordinate, interpersonal relations-peers, supervision-technical, responsibility, company policy and administration, working conditions, work itself, factors in personal life, status, job security.

Herzberg et al. found that, indeed, there are two clusters of factors involved in motivation and job satisfaction. They identified five factors as strong determinants of job satisfaction: achievement, recognition, work itself, responsibility, and advancement. These factors appeared very infrequently when respondents described events that were dissatisfying. They describe an individual's relationship to what he or she does, the content of the job and were labeled 'motivators.' Another cluster of factors describes the situation, the context or the environment, in which the job is done. These factors can prevent or cause dissatisfaction, but not cause satisfaction. Herzberg et al. term these factors 'hygiene factors' or 'dissatisfiers,' in a later publication also 'maintenance factors' (Herzberg, 1966). Significant hygiene factors in the original study included company policy and administration, supervision-technical, salary, interpersonal relations-supervision, and working conditions. Later studies using the same data collection method found similar evidence and, depending on the researched population, additional evidence for other hypothesized factors of the original coding scheme (Herzberg, 1966).

While deemed useful for workplace design and other practical purposes, and substantiated in applied research, Herzberg et al.'s seminal work has also been criticized, particularly for the data collection method, supposedly being too suggestive in leading to two separate sets of factors. Another discussion point evolves around the researched

population. Whether this theory applies to low level, general labor-type jobs is still discussed, because many studies were done with supervisory, managerial, or professional employees. But Herzberg (1966) cites studies with unskilled workers, such as hospital workers and housekeeping workers, which strongly support the theory.

The study reported here tests the motivators versus hygiene factors model with a population of non-supervisory employees with no to low level supervisory responsibilities who are working in different businesses in the green industry (greenhouse production, nurseries, landscape contractors). Tasks involved are often physically demanding and under less than optimal working conditions. In addition, we expected that supervisory skills and knowledge of supervisors are limited and few of them received training in how to manage people. The work itself is expected to be routine, not offering much opportunity for growth.

The general hypothesis based on the Herzberg et al. model assumes motivators will be referred to more often in the context of job satisfaction and positive events and hygiene factors will be referred to more often in the context of dissatisfaction and negative events. Based on Herzberg's (1966) review of supporting evidence, differences are expected to be at least as high as the smaller frequency. In addition, the general hypothesis is expected to hold for individual motivators and hygiene factors which will be tested for each factor in form of specific hypotheses.

Material and Methods

Reviewing the state of job satisfaction research, Locke (1976, p. 1343) concluded that research on job satisfaction has relied too much on rating scales and too little on interviews and has relied too heavily on correlational studies and could benefit from more

case studies and in-depth interview studies. Locke's conclusion being as valid today as it was when first published, this study was designed as a set of case studies of several operations based primarily on in-depth interviews. Fourteen businesses participated in the study, four greenhouse operations, four landscape contractors and six nurseries. All participating sites were located in Michigan.

The sample of respondents analyzed consists of a total of 15 employees who agreed to talk about their work experience and management practices in their firms. All respondents were introduced by their managers as non-supervisory employees, but five of them mentioned low level supervisory responsibilities during their interviews and one respondent had started to train as a supervisor but decided to revert back to a non-supervisory position. Other interviewees were approached by coworkers in lieu of the supervisor because of their language abilities, although no formal supervisory responsibility had been assigned. Of the 15 interviewees, seven were male and eight were female. Three male and four female employees were of Hispanic descent.

Interviews followed an interview schedule with open-ended questions and lasted between half an hour and two hours. The order of questions was adapted to the flow of answers. Themes brought up by respondents were explored by the interviewer. Several questions were targeted at how employees felt about their work and its environments. Specific positive or negative events were not solicited, but explored if respondents volunteered them. Questions ranged from 'What do you like (dislike) about your job?' to 'What are the specific strengths (weaknesses) of the personnel management practices, here?' 'What would you like to change?' A number of questions about specific management practices, e.g., training or employee evaluation, also yielded job satisfaction related answers.

All interviews were tape-recorded and transcribed. Data analysis and coding were based on the transcripts, using the Atlas-Ti software package. The initial coding scheme was modeled after Herzberg et al.'s sixteen factor model. In addition to the job factors, job attitudes were coded as 'satisfaction' and 'dissatisfaction.' During the analysis, this bipolar distinction seemed insufficient to describe the complete spectrum of employees' job attitudes; therefore 'ambivalence' and 'neutral stance' were added to the coding scheme. Further, several job factors had to be collapsed to a joint code: responsibility, promotions, accomplishments, and potential for growth were all coded under 'achievement.' The salary factor was broadened to 'compensation' to include benefits and perks and reflect the total compensation package. Status was excluded from the coding scheme, because interviewees made no references to status.

After an open coding of the transcripts, additional factors emerged that will be reported in the results section, but were not included in testing the general hypothesis: family values, referring to a family-like atmosphere in the organization, supervisors and/or managers employing management practices that reflect family values; involvement, referring to the level of input of employees in decision making and employees' willingness to make improvement suggestions at the workplace; safety, referring to safety rules, training, and enforcement in the workplace, accident prevention and dealing with accidents; and information, referring to the information about the company that is shared with non-supervisory employees, including short-term and long-term planning information, financial information, and ownership changes.

The analysis of the job factors and how often they appear in a positive and satisfying context or in a negative and dissatisfying context is based on the number of citations, not

the number of respondents. E.g., when an interviewee talks about how well her supervisor fulfills her task, such as communicating task assignments, training new employees, and enforcing rules and regulations at different times during an interview, each relevant speech turn has been coded and counted as one citation. This type of analysis assumes that a factor mentioned more often is more important to respondents.

Each interview has been analyzed by at least two independent coders. After the initial round of open coding, codes were discussed and code definitions clarified. In a second round all interviews were recoded based on the final coding scheme. In the third round of analysis coders met and discussed the coding and interpretation of each interview segment until a consensus about the meaning of each citation and the appropriate code was reached.

Results

Results will be presented in three sections, (1) general hypothesis, (2) specific results for each factor based on the Herzberg et al. model, and (3) additional findings that emerged during the analysis process, suggesting additional factors to be considered for the researched population.

General Hypothesis

Table 1 provides an overview of the analysis results with respect to the general hypothesis: (1) for all motivators combined satisfaction is higher than dissatisfaction and (2) for all hygiene factors combined dissatisfaction is higher than satisfaction. While the data supports part 1 of the general hypothesis with positive remarks being 34% more frequent than negative remarks referring to motivators, part 2 could not be corroborated.

Positive remarks referring to hygiene factors were also more frequent, a result that contradicts findings referenced by Herzberg et al. (1959) and Herzberg (1966). Overall, the researched group of employees was two times more likely to talk about positive feelings of job satisfaction (40%) than negative feelings of dissatisfaction (20%). Neutral comments were also frequent (36%).

Table 1: Attitudes related to aggregated job factors (percentage of total citations)*

	Satisfaction	Dissatisfaction	Difference
Motivators	53%	19%	34%
Hygiene factors	44%	23%	21%
Difference	9%	-4%	13%

*Job attitudes (satisfaction, dissatisfaction) do not add up to 100%, because 'neutral stance' and 'ambiguity' have been omitted from the table.

While evidence presented in table 1 does not support the hygiene factor part of general hypothesis, it offers some support for the weaker hypothesis set forth by Herzberg et al. (1959) that two different groups of factors cause satisfaction and dissatisfaction on the job. All signs reported in table 1 have the expected direction, except for the difference between satisfaction and dissatisfaction for hygiene factors: satisfaction is mentioned more frequently referring to motivators than to hygiene factors; dissatisfaction is mentioned more frequently referring to hygiene factors than to motivators. In addition, the difference between positive feelings and negative feelings regarding hygiene factors is smaller than for the motivators. As a group, hygiene factors are less frequently related with satisfaction than motivators and more frequently related with dissatisfaction.

The next section discusses results for each individual factor included in the aggregated calculations, starting with the motivators. While motivators follow the Herzberg et al. model in general, evidence is weaker for some factors than for others. The results for the hygiene factors refute the specific hypotheses for almost each individual factor.

Specific Hypotheses

For the first two motivators, ‘achievement’ and ‘recognition,’ table 2 shows strong support for the hypothesis that positive feelings are more frequently reported than negative feelings. Reflecting part 1 of the general hypothesis, these findings support Herzberg et al.’s theory. However, while ‘work itself’ shows the expected sign, satisfaction being more frequent than dissatisfaction, the difference is smaller than expected. Work itself seems more like a hygiene factor when compared to the aggregated results (table 1). Whether work itself functions as a motivator for non-supervisory and low level supervisory employees remains questionable. One area of dissatisfaction is the assignment of supervisory and supervisory-mimicking tasks (e.g., translation mimics supervision, particularly when the supervisor is absent). These employees often lack the adequate level of authority, are not taken seriously by their “subordinates,” or do not want the additional responsibility.

Table 2: Attitudes related to motivators (percentage of citations)*

	Satisfaction	Dissatisfaction	Difference
Achievement	63%	14%	49%
Recognition	44%	14%	30%
Work itself	41%	25%	16%

*Job attitudes (satisfaction, dissatisfaction) do not add up to 100%, because ‘neutral stance’ and ‘ambiguity’ have been omitted from the table.

Table 3 provides an overview of the results for the hygiene factors of the Herzberg et al. model. With one exception signs are not showing the expected direction. The hygiene factors are not mentioned more frequently in a negative context than in a positive context. Three of these factors stand out in showing a motivator-like strong dominance of positive over negative remarks: ‘personal life,’ ‘interpersonal, superiors’ and ‘job security.’

Herzberg et al. saw interaction of professional and personal life as a source of conflict and dissatisfaction, because both compete for an employee's time. The researched group of employees has very few complaints in that respect. Not only do they share their workplace with friends and even family, but they also admire their supervisor's flexibility in accommodating their individual preferences and the necessities of their family life.

Table 3: Attitudes related to hygiene factors (percentage of citations)*

	Satisfaction	Dissatisfaction	Difference
Personal life	78%	9%	69%
Interpersonal, total	57%	27%	30%
- Superior(s)	85%	8%	77%
- Peers	41%	39%	2%
- Subordinates	29%	54%	-15%
- Not specified	69%	13%	56%
Supervision	50%	23%	27%
Job security	31%	6%	25%
Working conditions	44%	24%	20%
Organization	33%	22%	11%
Compensation	32%	27%	5%

*Job attitudes (satisfaction, dissatisfaction) do not add up to 100%, because 'neutral stance' and 'ambiguity' have been omitted from the table.

Overall, interpersonal relations seem to act as a motivator for this group with positive comments almost doubling negative comments. The strongest positive subgroup is the interpersonal relationships with superiors. Personal relationships with supervisors and managers are a source of satisfaction. While the researchers had expected employees not to differentiate between the technical aspects of supervision and the personal relationships, most of them have positive personal relationships even when being critical of the technical skills of their supervisors.

Similar to personal relationships with superiors, employees are very satisfied with personal relationships in general ('not specified'). This code was used for both general references to other people at the workplace and when the reporting relationships were not

defined during the interview. For peer relationships positive comments are only slightly more frequent than negative comments, therefore the role of personal relationships in the workplace is ambiguous.

The sole hygiene factor with the expected sign, where dissatisfaction is more frequent than satisfaction, is the interpersonal relationships with subordinates. As expected in targeting mainly non-supervisory employees, the number of citations for this code is very small (2% of all job factor citations). Whether low level supervisory responsibilities jeopardize personal relationships, whether the often new and unprepared supervisory role creates role conflicts for employees, or whether this result evidences the hygiene aspect of interpersonal relationships requires further analysis. Comparing results to the attitudes of more experienced supervisors could bring clarity to this factor.

Job security is most often talked about in a neutral stance (63%). Employees mention the years they have been with the company and its financial wellbeing and growth as indicators of job security. Some employees did work for a different business for a time and were welcomed back, often under better conditions than before. Most feel their jobs are secure, which is a source of job satisfaction.

The technical aspects of supervision, e.g., training, communication, competence and fairness, are also seen primarily with satisfaction. Some employees are enthusiastic about their supervisor's competence and skills. An understanding, flexible supervisor with a sense of humor who shows recognition and gives constructive feedback builds loyalty in employees. Complaints and dissatisfaction with supervision address lack of communication, incomplete instructions, favoritism, talking down and being pushy or harsh when mistakes have been made.

Working conditions are linked with positive comments more often than with negative comments. Working outdoors is typically perceived as positive, but weather conditions (cold, heat, wind) are perceived as taking a toll on the body and therefore negative. Overall working in agriculture is seen as positive. Negative aspects include the facilities (lunch room, restroom). Work load, work pace and hours worked are perceived differently by different employees. Some employees feel stressed by working too many hours; others feel they are not getting enough hours or complain about a high variance in the work flow; a third group thinks agricultural work is laid back.

Comments on business organization, hierarchy, policies and procedures are most often neutral (41%). In general, procedures and policies are accepted as useful. Particularly when leaving enough flexibility for individual cases, employees are satisfied with the organization. Some interviewees perceive their company as needing more structure and rules. E.g., when ownership and management responsibilities are split between two or more individuals, conflicting assignments may arise. The small difference between positive and negative comments indicates that 'organization' is more a hygiene factor than a motivator.

Based on previous research with agricultural employees (Bitsch, 1996) and the wage level in the industry, compensation was expected to be an area of dissatisfaction. However, positive comments are more frequent than negative comments. Entry level wages are perceived as low, but companies use different bonus systems to reward employees, which are valued. The most frequent complaint was the lack of regular raises or an established system to decide on raises. Benefits were appreciated where available. Some employees would like to see better coverage. When asked what would be a reason

to accept a different job, better pay or benefits were mentioned most frequently. Perks, such as meals, occasional presents, use of tools and machinery, led to positive feelings about work. Still, the small difference between positive and negative comments hints at the role of wages and benefits as rather a hygiene factor than a motivator.

Additional Findings

Additional analysis of the interview transcripts culminated in four factors that seem important to this group of employees but were not included in the Herzberg et al. model (table 4). One unexpected concept was family values. Because this factor was not anticipated and comments have not been encouraged through specific questions, the number of citations is small (2% of all job factor citations). However, nine out of 15 interviewees brought up family values in a positive manner, only one of them adding some negative aspects. Positive references include that employees feel taken care of, that the workplace is like a family, and that employees have direct access to top management. Based on these comments, we assume that family values can act as a strong motivator.

Involvement is the level of input an employee has in workplace decisions, starting out with the immediate task, how it is done and with whom, reaching to equipment purchase decisions and facility upgrades, product development or improvement, and including any suggestions an employee offers and how they are dealt with. A feeling of “working for a common goal” is an indicator of involvement on a general level. According to the results, involvement functions as a motivator, although most comments are neutral (62%).

While drawing more positive comments than negative ones, safety is a concern of employees and likely to act as a hygiene factor. Safety includes references to accidents and work related illnesses. Employees want to feel safe at their workplace and are

troubled by unsafe conditions and accidents. They appreciate any improvement, such as training and precautions.

Table 4: Additional job attitudes (percentage of citations)*

	Satisfaction	Dissatisfaction	Difference
Family values	88%	4%	84%
Involvement	29%	4%	25%
Safety	29%	20%	9%
Information	20%	18%	2%

*Job attitudes (satisfaction, dissatisfaction) do not add up to 100%, because ‘neutral stance’ and ‘ambiguity’ have been omitted from the table.

Different from instances, when employees use the word “information” and mean aspects of supervision (e.g., clear and complete instructions), the factor information describes whether employees receive information beyond their immediate job about the company in general, change in ownership, long-term plans and financial wellbeing. Information can contribute to satisfaction, if an employee receives regular updates on the company. Information can also be a source of dissatisfaction, when employees feel left in the dark and would like to see more regular meetings.

Discussion and Conclusions

Support for Herzberg et al.’s theory of job context factors causing dissatisfaction or the absence thereof versus job content factors causing satisfaction or no satisfaction provided through this analysis is weak. While the number of respondents is small, few cases can suffice to challenge or qualify a theory. The critique that the two-cluster model is possibly an artifact of the critical incident data collection method seems to the point.

Using an in-depth interview approach, which is similar to the method employed by Herzberg et al., the results show no clear-cut boundary between positive and negative feelings about the job along the lines of content versus context factors. Some context

factors—personal life, interpersonal relationships with superiors, and family values, function as motivators. On the other hand, a content factor—work itself, shows a potential for dissatisfaction that challenges its role as a motivator for this group of employees with mostly general labor-type tasks. These findings are important, because motivational approaches to work design often focus narrowly on the task itself thereby unnecessarily limiting scope of potential improvements.

Results indicate that both groups of factors, content and context factors can substitute for each other to some extent. Job satisfaction does not solely depend on motivators. Most interviewees would recommend their company to a friend or a relative searching for a job, which means they have reached at minimum a basic satisfaction level.

Overall, employees are much less likely to emphasize negative aspects of their work than positive ones. Eliciting negative comments required intensive probing, while interviewees liked to dwell on the positive. This corresponds with typical findings in job satisfaction studies of 70-90% satisfied employees and does not necessarily indicate very high satisfaction levels, but rather social expectations and response tendencies.

The results of this analysis correspond with other studies of job satisfaction in agriculture. Bitsch (1996) notes physical strain and wages as the most frequent reasons to leave the industry cited by horticultural apprentices. Dissatisfying aspects of working conditions and perceptions of wages and benefits cited by non-supervisory employees corroborate these results. The most frequently stated area for improving job satisfaction in the apprentice study was also compensation. Recognition, support with additional training and development, and participation and responsibility in work-related decisions were other frequent responses. These responses correspond with satisfying and dissatisfying

aspects of supervision articulated by non-supervisory employees, here. Fogleman et al. (1999), in a study of dairy farm employees, also found overall high satisfaction levels, but varying satisfaction with different components. The satisfaction component over which managers and supervisors have the most control, feedback, is where employees were least satisfied. This result corresponds with the presumed deficit in supervisory training of agricultural supervisors and managers and the results of this study.

While some areas of dissatisfaction, such as compensation and working conditions are structural and possibly hard to change, others are more accessible. First time supervisors, particularly when promoted out of a group of peers, need preparation for supervisory tasks. They need to learn what is expected of them in their new role and training on how to manage people. In addition, responsibility, even for a small crew, needs to be accompanied by authority. Without decision making authority, leading others is more difficult. Managers should not assume that a subordinate who is doing an excellent job is necessarily willing and able to take on more responsibility. Some employees feel coerced into accepting a supervisory position, which they are not ready to fill out—one reason being the higher compensation that accompanies it.

Other points of intervention are internal communication and information. Regular meetings serve multiple purposes: recognition of employees' contributions, general information about the company, long-term plans and developments, and review of organizational rules and policies. A culture of communication should also include safety and accident prevention aspects, both at the company level and at workgroup levels.

While broadening this analysis to a larger group of employees would provide more credibility to the analysis, the next step in solidifying the above conclusions requires the

analysis of supervisory employees' attitudes in a similar work environment. Higher level interviewees from the same or similar companies would provide the necessary contrast to develop a more complete picture of job satisfaction in agriculture. In addition, the usefulness of the Herzberg et al. model for analyzing job satisfaction in agriculture could be further clarified with the analysis of different positions and levels of responsibility.

References

Billikopf, E.G. (2001): Interpersonal communication tops concerns of farm supervisors. *California Agriculture* 55 (5), 40-43.

Bitsch, V. (1996): Job satisfaction during apprenticeship. *Acta Horticulturae* 429, 97-102.

Bolinger, D. (2000): Motivating your employees to their potential. *Michigan Dairy Review* 5(3), 9-10.

Clegg, D.O. (1963): The motivation of county administrators in the Cooperative Extension Service. PhD thesis, University of Wisconsin.

Cranny, C.J., Smith, P.C., and E.F. Stone (Eds.) (1992): Job satisfaction: How people feel about their jobs and how it affects their performance. Lexington Books: New York.

Darboe, K. (2003): An empirical study of the social correlates of job satisfaction among plant science graduates of a Midwestern university. University Press of American: Lanham (Md).

Fisher, C.D. and Locke, E.A. (1992): The new look in job satisfaction research and theory. - Job satisfaction: How people feel about their jobs and how it affects their performance, ed. by Cranny, C.J., Smith, P.C. and E.F. Stone, Lexington Books: New York, 165-194.

Fogleman, S.L., Milligan, R.A., Maloney, T.R. and W.A. Knoblauch (1999): Employee compensation and job satisfaction on dairy farms in the northeast. Selected Paper, AAEA Annual Meeting.

Herzberg, F. (1966): Work and the nature of man. World Publishing Company: Cleveland and New York.

Herzberg, F., Mausner, B., and B.B. Synderman (1959): The motivation to work. John Wiley & Sons: New York.

Howard, E.H. (1991): Human resource management on the farm: Attracting, keeping, and motivating labour on Ontario dairy, hog poultry, and flower farms. Report for the Canada/Ontario Agricultural Employment Committee (August, 1991).

Lawler, E.E. III (1973): Motivation in work organizations. Brooks/Cole: Monterey (CA).

Locke, E.A. (1976): The nature and causes of job satisfaction. - Handbook of industrial and organizational psychology, ed. by Dunnette, M.D., Rand McNally: Chicago, 1297-1349.

Niebrugge, V. (1992): Declining employee morale: Defining the causes and finding the cure. NOVA Group.

USDA (U.S. Department of Agriculture), National Agricultural Statistics Service: 1997 Census of Agriculture. <http://www.nass.usday.gov/census/census97> (accessed: 04/09/2001).

Vroom, V.H. (1964): Work and Motivation. Wiley: New York.