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## Staff Paper

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### *Employee Compensation and Satisfaction on Dairy Farms in the Northeast\**

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\* Selected paper presented at the American Agricultural Economics Association Annual Meeting in Nashville, Tennessee, August 8-11, 1999.

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## ABSTRACT

As economies of size become increasingly important in production agriculture, farm sizes continually increase. For the farm members of the Northeast Dairy Producers Association (NEDPA), this results in larger herds, more acres of crop production, and more full-time, non-owner employees. The NEDPA membership realizes the important roles these individuals play in their businesses and are devoted to the study of successful human resource management practices. This research quantifies and illustrates the internal pay structure and enumerates the current employee satisfaction levels present on these farms for different subsets of employees.

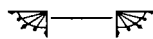
To enumerate the study, the NEDPA membership was divided into two groups. The first group, consisting of farms with herds smaller than 500 cows and greater than 1500 cows participated in the internal pay portion of the study where a researcher conducted personal interviews with the farm owner or manager and gathered detailed compensation information for each full-time, non-family employee. A second, more homogeneous group of farms, those with herd sizes ranging from 500 to 1500 cows, participated in both the internal pay study described above and the employee satisfaction study. On these farms, the owner or manager provided detailed compensation information about the employees and then the employees themselves were interviewed to assess their job satisfaction levels. In those cases where some employees were unavailable, another employee was asked to administer the survey to their coworkers and return the completed survey to us. We also gathered general managerial and production data at both groups of farms.

Employers classified each employee as one of five competency levels based on supervisory capacity, level of decision-making authority, and skill level. These classifications determined the internal pay structure on these farms. A natural hierarchy related to tenure and education is evident as the members of each competency level become more experienced and educated from one band to the next. Total compensation values also increase with higher competencies. **Mean** compensation values and standard deviations for each level provide benchmark bands, indicating ranges of compensation values and illustrating the total compensation for 65 percent of the employees within each competency level.

The internal pay data is also used in two regression analyses where total compensation and annual cash wage are the different dependent variables. The explanatory variables consist of farm and employee characteristics. The annual wage model has a slightly stronger R-squared value and coefficients that are more consistent with economic theory and a priori information but both models illustrate several interesting factors consistent with their respective dependent variables.

Total Employee Satisfaction was measured through four core dimensions: autonomy, variety, feedback, and task identity. While the Total Satisfaction scores were fairly strong, the most interesting result is that Feedback is the core dimension in which employees are least satisfied. This result was supported by correlating the satisfaction components with variables such as compensation, experience, and demographic factors. These statistics indicate that feedback is not associated with wages or other factors but more likely with the amount and quality of communication an employee has with the farm owners or managers.

Many employers utilize some non-traditional compensation techniques. Qualitative observations showed that employees enjoy these non-cash benefits but frequently underestimate their values. This is a problem for producers as they compete with seemingly higher wages from other area employers. This concern can be alleviated, again, by good communication between employers and employees about all aspects of the job, including compensation values.



# EMPLOYEE COMPENSATION AND SATISFACTION ON DAIRY FARMS IN THE NORTHEAST\*

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Economies of size have had a drastic impact on all areas of production agriculture. In New York State, the average herd size for dairy farms has grown drastically in recent years (New York State Agricultural Statistics). To remain competitive, many farms have become twenty-four hour milking operations that rely heavily on labor from outside the farm family. The prevalence of these non-family employees adds another dimension to farm management responsibilities.

This research revolves around the need for benchmark information about 1) the market value of dairy farm wages and benefits, 2) the satisfaction levels of full-time, non-owner employees of farms, and 3) the relationship pay has with employee job satisfaction. This information is important for dairy employers who wish to become and remain competitive in a tight labor market.

## *Methodology*

Because of growing employee bases and human resource management concerns, the 106 farm members of the Northeast Dairy Producers Association (NEDPA) were interested in participating in this study of employee compensation and satisfaction. NEDPA is an organization with a membership of high-end dairy managers. For that reason, it is important to emphasize that although this research may be used for comparison across the dairy production industry, it is not a random sampling of Northeast dairy producers.

The Internal Pay Structure data is comprised of detailed information for all full-time, non-owner employees at 92 NEDPA member farms. A subset of that population, specifically, 31 farms with herd sizes between 500 and 1500 cows, extended their participation to include the employee satisfaction portion as well. Because herd sizes on NEDPA member farms range from 75 to 3000 cows, a more homogeneous sample was necessary for the employee satisfaction portion of the survey.

The study was limited to full-time, non-owner employees because of time and budget constraints and a desire for a homogenous sample of employees. For the purpose of this study, an employee is to be considered full-time if he or she works at the farm on a regular basis and typically works at least 35 hours per week.

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A general farm information survey, completed by the farm owner or manager, provided information about the farm and its management. The farm owner or manager also completed the internal pay structure survey and outlined each full-time, non-owner employee's total compensation package including information about the factors that contribute to each employee's compensation rate. Finally, an employee survey examined the employees' job satisfaction. If the enumerator was unable to interview every full-time, non-owner employee at a farm, another employee was asked to give the missing employee a survey, answer any questions he or she might have, and mail the survey to the researchers by a given date. Because it is not uncommon for farm employees to have English as a second language, the employee survey was also translated into a Spanish version.

Several pretests determined the exact information that would be necessary for the internal pay structure survey. To determine the factors that influence compensation rates and therefore should be included on the survey producers spoke candidly about the factors they consider when determining an employee's wage. Many of the factors they listed were easily quantifiable, such as years of experience and educational background. Other factors were not as easy to quantify but could conceivably be captured in a personal interview, such as an individual's job title or key responsibilities.

According to the literature and the pre-test interviews, supervisory capacity, skill level, and decision-making authority are the three key qualities that influence employee compensation levels. Five competency levels were developed to classify employees according to those three criteria. Every employee in this study was classified as one of the following five competency levels:

**Level One:** Employees who are either very new to the farm or have no advanced skills. These individuals are given their tasks by another person and then perform miscellaneous jobs that require no previous training. This level can also include people who are in training for skill-specific positions but who have not yet acquired those skills.

**Level Two:** Very specialized individuals who perform anywhere from one to many specific tasks which require training. These employees do not have the authority to make decisions relating to their job responsibilities, area of production, or coworkers. As a result, they have no supervisory authority.

**Level Three:** Employees who are very skilled in at least one specified area. These employees may make decisions related to his or her area of expertise and may administer those decisions through other employees, therefore giving a Level Three employee some supervisory capacity. However, this person's decision-making authority does not extend into other areas of the operation.

**Level Four:** Because of his or her exceptional skill level, this person is in a position to make decisions which impact entire areas of the operation. Many employees could have to carry out those decisions, giving this person a potentially large supervisory authority. However, a Level Four employee's decision-making authority and supervisory capacity does not cover the

entire farming operation. This person's input could affect other areas, but the ultimate decision is not his or hers.

Level Five: Level Five employees are the most skilled and qualified full time employees with a farm. They have complete supervisory authority and the most decision-making authority given to any full time employee.

The competency level approach seen here is one type of the very popular "Broadbanding" compensation mechanism by which employees of similar skill levels or competency are taken together in compensation "bands", regardless of job title. These bands compensate like employees at like rates across the entire organization, therefore maintaining internal and external equity.

During the pretests, employers provided listings of job titles and key responsibilities found in their operations, which served as the basis for the list of job titles and responsibilities included in the survey. The responsibilities hinged around subsets of skills or knowledge required for the jobs.

The compensation elements included in the study are the annual cash wage, the average hours worked per week, the annual house rental value paid by the employer, the annual health insurance value paid by the employer, the employer contribution to the employee's retirement plan, and any additional bonuses or perks and their cash value as determined by the employer. In addition, the survey determined if the employee was paid on an hourly or salaried basis, what the hourly wage was, if applicable, and if the employee worked a day, night, or swing shift.

This information was included in a least squares regression analysis. This type of analysis, Point Factor Theory, is commonly used in compensation studies to value particular employee or job attributes. (Belcher)

The satisfaction survey instrument hinged on four core dimensions of job satisfaction—Feedback, Autonomy, Variety, and Task Identity (Lawler). The Feedback questions hinged on the quantity and quality of job evaluation given to the employee by the owner or manager. They also evaluated the employee's access to job performance mechanisms (such as somatic cell count) that have employee evaluation intrinsic in them (Lawler). Autonomy was measured in the employee survey through questions about the ownership of their and the degree of authority employees have over how they perform their tasks (Lawler).

Task Identity is defined as, "a very clear cycle of perceived closure and high visibility of the finished product." For the purposes of this research, the Task Identity questions presented to these employees regarded a perception of where the employee fits into the larger farm scheme (Lawler).

The employee's perception of the amount of Variety present in his or her job was also measured. It is important to stress the element of challenge, not just difference when evaluating Variety. If an employee performs different tasks that use the same skill sets and none of those tasks challenge the employee, that job, for that employee, is low on variety (Lawler).

### **Data Analysis**

This data represents compensation information for 709 full-time, non-owner employees representing 93 NEDPA member farms. The descriptive statistics show the average compensation package is valued at \$27,433. There is a natural progression of compensation through the competency bands. The standard deviations also indicate more variation in compensation values within the higher competency levels. Higher levels also see more diverse compensation packages, with cash wage constituting a smaller percentage of the total compensation value.

Table 1 Average Annual Employee Compensation

	All	Level 1	Level 2	Level 3	Level 4	Level 5
Total Compensation	\$27,433	\$21,712	\$24,315	\$28,123	\$34,083	\$38,847
	8100 <sup>1</sup>	4414	5662	7553	8019	9664
	709 <sup>2</sup>	72	255	238	116	24
Annual Cash Wage	22,939	19,764	20,471	23,544	28,095	29,579
	6254	4022	4638	5961	5938	8812
	709	72	255	238	116	24
Health Insurance	3070	2966	2863	3014	3252	3777
	1666	1874	1583	1655	1828	1683
	371	17	117	136	74	16
Housing	5283	3737	5120	5551	5273	7166
	2470	750	2365	3149	1315	2819
	210	16	71	64	42	12
Retirement	1170	949	831	1229	1404	1626
	909	369	317	1027	1012	1184
	193	7	50	76	48	10
Other Benefits	1970	900	1805	1764	2464	3317
	2221	821	2006	1654	3203	2172
	383	26	133	131	67	18
Hourly Wage <sup>3</sup>	7.96	6.95	7.37	8.19	9.26	9.07
	7.74	1.24	1.30	1.53	1.89	3.09
	709	72	255	238	116	24

<sup>1</sup>Standard Deviation

<sup>2</sup>Number of Observations

<sup>3</sup>Hourly Wage Equivalent = Pay per hour for hourly and salaried employees

Pre-test interviews established that employers consider many factors when determining an employee's compensation. Of those factors, some were included as base variables for the purpose of regression. The base has the job title of milker, completed a high school degree, works a day shift, is paid an hourly wage, and is a member of competency level one. It is helpful to look at the variables as members of different categories:



Farm Size: One of the interesting results from this analysis is the statistical significance of both size variables. While compensation values trended upward for larger herd sizes, the opposite happened with regard to number of acres.

Key Responsibilities: General Cropwork and Manure Management were both significant and negative. Record Keeping, however, had a positive value. As a reminder, no responsibility variables were included as base variables because they have no threat for autocorrelation.

Experience: A priori information indicated that it is typically unimportant for individuals to have dairy experience on other farms for many employers. The regression output supports that hypothesis. For every year of experience on the farm, not in the current position, total annual compensation increases by \$210. With a coefficient of 290, Years in Current Position is even larger and more significant, denoting a natural seniority-based compensation principle. Therefore, with our compensation bands, experience is quite possibly a determinant of that individual's position within the wage band. In time, these employees may advance to a higher competency levels, resulting in a higher compensation rates while maintaining the same job title.

Competency Level: The competency levels are all statistically significant and follow much the same pattern presented through the pay bands. Where Level One is the base variable, the subsequent levels increase by roughly \$3000 each. Therefore, the model shows that an increase in competency level alone, regardless of an increase in tenure or change in job title, results in an increase in the value of an employee's total compensation package of about \$3000.

Unemployment: The regression output follows closely with economic theory although this coefficient is not statistically significant.

Education: The coefficients assigned to the education variables were not consistent with theory on this subject. While High School Degree was the base variable, SOMEHS had a positive sign, indicating that graduating from high school results in a lower compensation rate. BS had a negative sign. It is important to note, however, that none of the education variables were statistically significant.

Shift: According to pre-test interviews, many employers pay a shift differential to employees working nights, a fact not seen in the econometric findings. The coefficients for shift were not statistically significant and exhibited signs contrary to the a priori information.

Many producers utilized some non-traditional compensation alternatives, such as farm-paid child care, utilities, phone service, trash service, store credit at local supermarkets, and laundry service. While most employees appreciated these benefits, many employers commented that the employees did not understand the value of these and other non-cash compensation elements. Managers who provided detailed information about the values of benefit packages to their employees on a regular basis reported the most success with these alternatives.

## Satisfaction

The satisfaction measurement hinges on four core dimensions of job satisfaction—Feedback, Autonomy, Variety, and Task Identity (Lawler). These core dimensions were used to develop a measurement of total satisfaction and satisfaction for each dimension. Satisfaction is measured on a scale of one to four, with one being very satisfied and Four being very unsatisfied. The research results indicate these employees have a satisfaction level of 1.79 (Table 2).

Table 2. Employee Satisfaction Results<sup>1</sup>

Satisfaction	Employees					
	All n=295	Level 1 n=22	Level n=117	Level 3 n=105	Level 4 n=44	Level 5 n=7
Total	1.79	1.94	1.84	1.78	1.60	1.71
	.38 <sup>2</sup>	.37	.39	.36	.33	.45
Variety	1.88	2.07	1.97	1.85	1.67	1.96
	.56	.56	.61	.51	.46	.62
Task Identity	1.52	1.71	1.54	1.53	1.40	1.43
	.40	.47	.38	.39	.40	.43
Autonomy	1.81	1.94	1.94	1.79	1.52	1.57
	.51	.47	.52	.49	.46	.37
Feedback	1.92	2.02	1.90	1.95	1.82	1.86
	.61	.54	.58	.52	.45	.50

<sup>1</sup> Where 1 is very satisfied and 4 is very unsatisfied

<sup>2</sup> Standard Deviation

\*NOTE: The mean satisfaction values of no two levels are statistically different from each other at the .50 significance level.

Task Identity responses were not only the most positive, at 1.52, but they also had the smallest standard deviation. This indicates that the employees can easily see the relevance of their work and how they play a role in the success or failure of the business.

Next, employees were, on average, satisfied with the Autonomy or sense of ownership about one's work. The aspect of satisfaction that performed third in this survey was Variety. Overall, employees ranked Feedback from superiors lowest of all. This scored 1.91 with a .61 standard deviation. While many factors, such as Variety, have certain challenges that are intrinsic in the job, Feedback is entirely in the hands of the owners or managers, yet it is the core dimension employees are least satisfied with. This is an important result for these producers because, according to these results, their employees crave Feedback more than any other satisfaction component, and it is the component over which the employers have the most control.

It is perhaps even more interesting to note the satisfaction trends that exist within the competency levels (Table 2). Satisfaction steadily increases from one competency level to the next until Level Five when the satisfaction decreases for each of the four core dimensions. As a result, Level Four employees are the most satisfied employee group. Keep in mind that the mean

satisfaction values for each competency level were not statistically different from the values for any other competency level. So while the trend is apparent, it cannot be supported statistically.

Of the four core dimensions, Task Identity continues to be the strongest among employees of all competency levels. Autonomy is the second strongest for all groups, except Level Two employees who consider Feedback the second strongest dimension. This indicates that Level Two employees feel worse about the level of control they have over their job's key responsibilities than they feel about the amount and quality of Feedback they receive from supervisors. Perhaps Level Two Employees are in positions where training and evaluation are an active part of their job.

Generally, the data reflects well on the satisfaction of these employees. While overall, Feedback is the area with the most room for improvement; employees in levels one, two, and five struggle more with Variety than any other dimension. This is not surprising, considering the nature of the competency groupings for ones and twos, but it does not fit with the methodology for fives.

These results are the measurement of perceived Variety, not of actual differences in an employee's tasks. The perception an employee has of Variety is closely linked to the challenge associated with his or her work. It is possible individuals struggling with Variety are not dissatisfied with the number and types of different tasks, but rather the tasks themselves do not have enough intrinsic challenge.

Remember that Level Five Employees are individuals who have risen to the highest levels on the farm without gaining ownership. Also, one should note that the sample size for Level Five employees is very small relative to the samplings of the other competency levels when considering this statistical information. So while employees are, on average, satisfied with their jobs, there is room for improvement, particularly with Feedback and Variety. Again, note that the mean values are not statistically different from each other when considering values within the same core dimension and between means of different competency levels.

Demographic information was used to determine if there was any correlation with any employee characteristics and low or high job satisfaction. While these correlations are in no way representative of causality, they do provide statistics that back up important trends. The only statistically significant job title correlation showed a negative relationship between Variety Satisfaction and the job title of Milker.

Total Satisfaction was positively correlated with all tenure variables included in the study (Total Years with the Farm, Total Years in Current Position, Total Years of Dairy Experience). Furthermore, each tenure variable was positively and significantly correlated with Autonomy Satisfaction. The only other significant tenure correlation showed a positive relationship between Total Years with the Farm and Variety Satisfaction.

Total Satisfaction, Variety Satisfaction, Autonomy Satisfaction, and Task Identity Satisfaction were each positively and significantly correlated with Total Compensation. In other

words, Feedback, the lowest Satisfaction area, was the only area without a significant statistical relationship to compensation, indicating employees receive feedback through other means.

There was no significant statistical relationship between any satisfaction area and demographic factors such as gender, race, age or marital status. In addition, descriptive statistics showed statistically insignificant differences in the satisfaction of members of different demographic groups, indicating that satisfaction with dairy employment cannot be predicted based on demographic measures. In addition, whether or not the employee grew up on a farm had no statistical relationship to their satisfaction.

### ***Employee Satisfaction Implications***

Because comparable cross-industrial data is not available, one cannot do with satisfaction what has been done with compensation. It is undeterminable if dairy employees are more or less satisfied with their jobs than employees in other agricultural areas or other employment industries such as manufacturing or retail. What this information can conclude is that dairy employees are satisfied with their jobs. When asked whether they perceive dairy employment as a career, eighty percent of the employees interviewed responded yes. This emphasizes that people do, in fact, perceive dairy employment as an area where they can advance within the business, find work that is challenging and enjoyable, and receive the kinds of benefits that prepare an individual for retirement. What dairy managers have done in most cases is develop complex compensation and industrial organization philosophies.

Unfortunately, the satisfaction results indicate a lack of structured emphasis on feedback and interpersonal communication. When the producers were asked what they do to reward employees for good performance, overwhelmingly, the first responses indicated oral communication or feedback. But according to the results, the employees still crave more feedback. It is important to emphasize that employees need not only compliments but also useful feedback about all aspects of their job performance—both supportive and constructive (Lawler).

Satisfied employees translate into an efficient business. In addition, satisfied employees have fewer reasons to leave, translating into a much lower turnover rate, absenteeism, and less need for new employee training. These factors are particularly important for dairy managers whose herds are frequently evaluated by milk quality standards that can be heavily influenced by untrained or inattentive workers.

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