

# **Job Satisfaction and Workforce Demographics**

a longitudinal study of the U.S. forest products industry



by  
Zi Wan  
Liam E. Leightley

Forest and Wildlife Research Center  
Mississippi State University

**The Forest and Wildlife Research Center** at Mississippi State University was established by the Mississippi Legislature with the passage of the Renewable Natural Resources Research Act of 1994. The mission of the Center is to conduct research and technical assistance programs relevant to the efficient management and utilization of the forest, wildlife, and fisheries of the state and region, and the protection and enhancement of the natural environment associated with these resources. FWRC scientists conduct this research in laboratories and forests administered by the University and cooperating agencies and industries throughout the country. Research results are made available to potential users through the University's educational program and through Center publications such as this, which are directed as appropriate to forest landowners and managers, manufacturers and users of forest products, leaders of government and industry, the scientific community and the general public. Dr. George M. Hopper is director of the Forest and Wildlife Research Center.

### **Authors**

Zi Wan is a Post-doctoral research associate in the Department of Forest Products. Liam E. Leightley is Professor and Head of the Department of Forest Products. His primary research interest is marketing and strategic planning in the forest products industry.

### **To Order Copies**

Copies of this and other Forest and Wildlife Research Center publications are available from:

Publications Office  
Forest and Wildlife Research Center  
Box 9680  
Mississippi State, MS 39762-9680

Please indicate author(s), title, and publication number if known.

Publications can also be found at our website at [www.cfr.msstate.edu](http://www.cfr.msstate.edu).

Wan, Z., L.E. Leightley. 2006. Job satisfaction and workforce demographics: A longitudinal study of the U.S. forest products industry. Forest and Wildlife Research Center, Research Bulletin FP 362, Mississippi State University. 7 pp.

# **Job Satisfaction and Workforce Demographics**

a longitudinal study of the U.S. forest products industry

by  
Zi Wan  
Liam E. Leightley

Forest and Wildlife Research Center  
Mississippi State University

**Table of Contents**

Introduction ..... 1

Results and Discussion ..... 2

    Demographic Characteristics..... 2

    Job Satisfaction..... 2

    Impacts of Workforce Demographics on Job Satisfaction..... 2

    Differences in Job Satisfaction across Income, Occupation, and Age ..... 2

    Forest Products Industry vs. Textile Products Industry ..... 3

    Forest Products Industry vs. Manufacturing Industry ..... 4

Summary and Conclusions ..... 5

References..... 7

## Introduction

Workforce is the most important factor and the only sustainable long-term competitive advantage of an organization. In today's intensely competitive global environment, there is a strong demand for workforce participation in organizational decision making to enable the achievement of higher productivity of an organization. One aspect of workforce participation is job satisfaction. Job satisfaction is defined as how much employees like or dislike their work and the extent to which their expectations concerning work have been fulfilled. Understanding job satisfaction is critical to the success of an organization and continues to be a major topic of research interest.

In this study, the effect of personal demographic characteristics—income, education, occupation, age, and gender—on job satisfaction are investigated. The goal of the study is to assist managers in making decisions relevant to employee job satisfaction in the U.S. forest products industry, including the U.S. wood furniture industry. In addition, the relationship of these workforce demographics and job satisfaction were compared with the U.S. textile products industry and with the entire U.S. manufacturing sector, excluding the forest products industry.

The data employed in the present analysis were based on 23 independent nationwide surveys conducted yearly from 1972 to 2002 (with the exception of 1979, 1981, 1992, 1995, 1997, 1999, and 2001) and administered by National Opinion Research Center at the University of Chicago. The study includes 688 responses of the U.S. workforce in lumber and wood products, the furniture and fixtures industry (SIC 25), and the paper and allied products industry (SIC

261-266). The study also includes 1,090 responses of the U.S. workforce in the textile products industry (SIC 221-229, 231, 238 and 239) and 7,904 responses of the U.S. workforce in the entire U.S. manufacturing industry, not including the forest products industry.

The industries of respondents were determined according to the Standard Industrial Classification (SIC) used by the U.S. Bureau of the Census. Respondents were classified into industries based on their answers to the questions: "What kind of place do you work for? What do they make?"

Job satisfaction, the dependent variable, was measured by the response to the question: "On the whole, how satisfied are you with the work you do—would you say you are very satisfied, moderately satisfied, a little dissatisfied, or very dissatisfied?" The independent variables were the personal demographic characteristics—income, education, occupation, age and gender. Income was measured by the response to the question: "In which of these groups did your earnings from (the occupation identified earlier) for last year fall? That is, before taxes and other deductions." Education was measured in terms of years of formal education completed for which credit was received. Respondents were classified into occupations based on their answers to the questions about the kind of work they do and what their jobs were called. Occupation was then dichotomized into blue-collar and white-collar based on 1970 and 1980 census occupational classifications. Age was recorded in exact years since date of birth. Gender was interviewer coded into male and female.

## Results and Discussion

### Demographics

To clarify the demographic characteristics of forest products industry respondents, respondents' income, education and age were classified into three groups, respectively: less than \$10,000, \$10,000-\$24,000 and \$25,000 or over; less than high school, high school, and more than high school; and 18-29 years, 30-49 years, and 50+ years. Income, education, occupation, age, and gender characteristics of the U.S. forest products industry respondents are shown in Table 1.

### Job Satisfaction

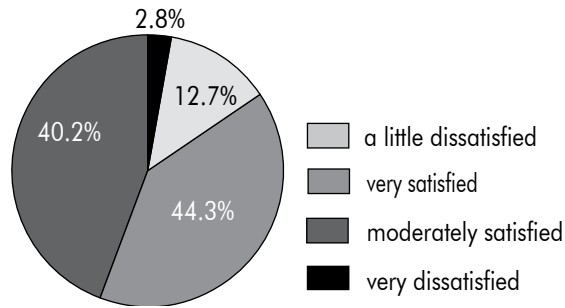
A description of job satisfaction as indicated by respondents in the U.S. forest products industry is presented in Figure 1. Almost eighty-five percent of the respondents were very satisfied or moderately satisfied with their job.

### Impacts of Workforce Demographics on Job Satisfaction

The results of the one-way ANOVA are presented in Table 2 which provides the impacts of workforce demographics on job satisfaction in the U.S. forest products industry. Income, occupation and age had significant effects on job satisfaction at  $\alpha = 0.05$ . There were differences in job satisfaction of the employees across the different levels of income, occupation and age in the U.S. forest products industry. Education and gender had no significant effects on job satisfaction. No evidence was found that higher levels of education were related to higher job satisfaction. There were no differences in job satisfaction across male and female workers.

*Table 1. Demographic characteristics of forest products industry respondents.*

Characteristics				Total
<b>Income</b>	<b>Less than \$10,000</b>	<b>\$10,000 - \$24,999</b>	<b>\$25,000 or over</b>	
%	33.4	39.9	26.7	100
n	144	172	115	431
<b>Education</b>	<b>Less than high school</b>	<b>High school</b>	<b>More than high school</b>	
%	21.5	57.5	21.0	100
n	147	394	144	685
<b>Occupation</b>	<b>Blue-collar</b>	<b>White-collar</b>		
%	77.9	22.1		100
n	536	152		688
<b>Age</b>	<b>18 - 29 yr.</b>	<b>30 - 49 yr.</b>	<b>50+ yr.</b>	
%	20.6	40.2	39.2	100
n	141	276	269	686
<b>Gender</b>	<b>Female</b>	<b>Male</b>		
%	32.3	67.7		100
n	222	466		688



**Figure 1. Job satisfaction of the U.S. forest products industry respondents.**

*Differences in Job Satisfaction across Income, Occupation, and Age*

Table 3 profiles mean and standard deviation of job satisfaction for employees across the different levels of income, occupation and age. Again, for the purpose of a clear description, respondents' income and age were classified into three groups, respectively: less than \$10,000, \$10,000-\$24,000 and \$25,000 or over; and 18-29 years, 30-49 years, and 50+ years. Job satisfaction has a minimum score of 1 meaning very dissatisfied and a maximum score of 4 meaning very satisfied. Table 3

indicates that in the U.S. forest products industry, including the U.S. wood furniture industry, workforces with higher income, white-collar employees, and workforces in higher age categories enjoyed higher job satisfaction.

*Forest Products Industry vs. Textile Products Industry*

As shown in Table 4, the comparison of the impacts of personal demographics on job satisfaction between the U.S. forest products industry and the U.S. textile products industry yielded no significant difference between these industries. For both of these two industries, income, occupation and age had significant effects on job satisfaction. All these three regression coefficients were positive and were significant at  $\alpha = 0.05$ . The evidence suggested that, in these two industries, higher levels of income, occupational position, and age were related to higher job satisfaction. Education and gender had no significant effects on job satisfaction. No evidence was found that

**Table 2. Impacts of workforce demographics on job satisfaction in the U.S. forest products industry.**

		<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
<b>Income</b>	Between Groups	153.127	3	51.042	5.284	.001
	Within Groups	3786.418	392	9.659		
	Total	3939.545	395			
<b>Education</b>	Between Groups	35.994	3	11.998	1.286	.278
	Within Groups	4860.055	521	9.328		
	Total	4896.050	524			
<b>Occupation</b>	Between Groups	1.533	3	.511	2.762	.042
	Within Groups	96.965	524	.185		
	Total	98.498	527			
<b>Age</b>	Between Groups	5659.171	3	1886.390	10.171	.000
	Within Groups	96716.298	522	185.472		
	Total	102475.470	525			
<b>Gender</b>	Between Groups	.906	3	.302	1.363	.253
	Within Groups	116.092	524	.222		
	Total	116.998	527			

Table 3. Differences in job satisfaction across income, occupation and age.

<b>Respondents</b>	<b>Job Satisfaction</b>		
<b>Income</b>	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>
<b>Less than \$10,000</b>	124	3.1290	0.87390
<b>\$10,000 - \$24,999</b>	161	3.3230	0.72113
<b>\$25,000 or over</b>	111	3.3784	0.70135
<b>Occupation</b>	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>
<b>Blue-collar</b>	397	3.2091	0.79080
<b>White-collar</b>	131	3.4122	0.75315
<b>Age</b>	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>
<b>18-29 yr.</b>	132	3.0152	0.85592
<b>30-49 yr.</b>	256	3.2930	0.75415
<b>50+ yr.</b>	138	3.4275	0.78660

higher levels of education were related to higher job satisfaction. There were no differences in job satisfaction across male and female workers.

*Forest Products Industry vs. Manufacturing Industry*

As shown in Table 5, a comparison of the impacts of personal demographics on job satisfaction between the U.S. forest products industry and the entire U.S. manufacturing industry, not including the forest products industry, indicated that there was no significant difference of the impacts of

personal demographics on job satisfaction. Income, occupation and age had significant effects on job satisfaction. All these three regression coefficients were positive and were significant at  $\alpha = 0.05$ . The evidence suggests that higher levels of income, occupational position, and age were related to higher job satisfaction. Education and gender had no significant effects on job satisfaction. No evidence was found that higher levels of education were related to higher job satisfaction. There were no differences in job satisfaction across male and female workers.



**Summary and Conclusions**

The forest products industry makes a major contribution to Mississippi’s economy. According to the study by Munn and Henderson (2003), the total industry output of Mississippi forest products industry was \$13.38 billion and value added production was \$5.33 billion annually. The Mississippi forest products industry accounted for 8.5% of all jobs in Mississippi. This industry had a total of 119,575 full or part-time jobs in Mississippi.

This longitudinal study indicates that, in the U.S. forest products industry, employees with higher income, white-collar workers, and older workers had higher job satisfaction. Education and gender had no significant impacts on job satisfaction.

A workforce with high job satisfaction leads to an improvement in work quality and productivity, and leads to satisfied loyal customers. A workforce who dislikes his/her

*Table 4. Job satisfaction between forest products industry and textile products industry.*

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.846	.190		14.989	.000
	Income	.025	.010	.100	2.471	.014
	Education	-.013	.013	-.040	-1.004	.315
	Occupation	.170	.079	.082	2.164	.031
	Age	.008	.002	.117	3.177	.002
	Gender	.026	.068	.015	.376	.707
	Industry	-.105	.068	-.063	-1.552	.121

*Dependent Variable: Job Satisfaction*

*Table 5. Job satisfaction between forest products industry and manufacturing industry.*

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.820	.082		34.519	.000
	Income	.022	.004	.085	5.177	.000
	Education	-.009	.005	-.030	-1.727	.084
	Occupation	.166	.027	.101	6.073	.000
	Age	.008	.001	.121	8.033	.000
	Gender	.024	.026	.014	.919	.358
	Industry	-.080	.046	-.028	-1.904	.057

*Dependent Variable: Job Satisfaction*

**Summary  
and  
Conclusions  
(continued)**

job is more likely to have higher absenteeism and turnover (Spector 1997).

Job satisfaction directly influences an organization's competitive advantage. It is very important for managers to understand workforce job satisfaction, as it highlights the issues that need to be addressed. The results of this study indicate that employees with lower income were less satisfied with their jobs. The level of income impacted job satisfaction significantly in the forest products industry. This indicates that there is a high probability that employees are willing to leave the forest products industry for a more financially rewarding employment.

Younger workers were less satisfied with the job. This scenario suggests that the turnover rate among younger workers may be high. Managers in the forest products industry should be aware of this situation

and work on methods to retain and attract young qualified employees. If this trend is not altered, there is a risk of shortage of workforce in the forest products industry.

As expected, blue-collar workers had lower job satisfaction than white-collar workers. The forest products industry is a relatively labor-intensive industry. Blue-collar workers play an important role in this industry. Managers need to determine the reasons for lower satisfaction in these essential jobs.

Given the importance of job satisfaction, it is imperative that managers in the U.S. forest products industry determine ways to improve the job satisfaction of lower income, blue-collar workers and younger employees. The same conclusions apply when comparing the forest products industry to the U.S. textiles industry and the entire manufacturing industry.

## References

- Locke, E.A. 1976. The Nature and Causes of Job Satisfaction. In Dunnette, M.P. (ed.) Handbook of Industrial and Organizational Psychology, Chicago, IL: Rand McNally. pp1297-1350.
- Muchinsky, Paul M. 1983. Vocational behavior and career development, 1982: A review. Journal of Vocational Behavior 23:123-178.
- Munn, I.A., J.E. Henderson. 2003. Forestry in Mississippi: The impact of the forest products industry on the Mississippi economy—an input-output analysis. Forest and Wildlife Research Center, Bulletin FO 216, Mississippi State University. 22pp.
- Porter, M.E. 1985. Competitive Advantage: Creating and Sustaining Superior Performance. New York, NY: The Free Press. 557p.
- Quinn, R.P., G.L. Staines, M.R. McCullough. 1974. Job Satisfaction: Is There a Trend? Washington, DC: Manpower Research Monograph No. 30, U.S. Government Printing Office. 57p.
- Ranz, J., A. Stueve, H.L. McQuiston. 2001. The role of the psychiatrist: Job satisfaction of medical directors and staff psychiatrists. Community Mental Health Journal 37(6):525-539.
- Scarpello, F., R. Vandenberg. 1992. The importance of occupational and career views to job satisfaction attributes. Journal of Organizational Behavior 13(2):125-140.
- Spector, P.E. 1997. Job Satisfaction: Application, Assessment, Causes, and Consequences. Thousand Oaks: Sage. 104p.
- U.S. Bureau of the Census. 1980. 1980 Census of Population, Classified Index of Industries and Occupations, Washington, U.S. Government Printing Office.
- U.S. Bureau of the Census. 1971. 1970 Census of Population, Classified Index of Industries and Occupations, Washington, U.S. Government Printing Office.



**Mississippi State**  
UNIVERSITY