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EXAMINING HERZBERG'S THEORY: Improving Job Satisfaction among Non-Academic Employees at a University

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This study reports the results of a survey of 2700 employees in business operations at a large public, research university. The analysis tests Herzberg et al.'s (1959) well-known, duality theory of motivators and hygiene factors and the impact of personal characteristics and job characteristics on perceptions of the work environment and job satisfaction. The results offer inconclusive support of Herzberg's theory although the *work itself* is the strongest predictor of job satisfaction after controlling for both personal and job characteristics. The study concludes by discussing both practical implications, for those in leadership positions in a university, and theoretical implications for researchers interested in exploring job satisfaction in a higher education context.

KEY WORDS: job satisfaction; quality of worklife; work climate; administrative staff.

THE PROBLEM AND RESEARCH QUESTIONS

This paper studies the men and women charged with the day-to-day operations of a university—human resource professionals, financial operations, facilities, and IT professionals. While often overlooked in research, the *Chronicle of Higher Educatio*n reports 750,000 non-academic, full-time staff members at colleges and universities in America (2003). By focusing on a subset of that population, business operations employees, this study addresses three questions: (1) How influential are personal characteristics and job characteristics on job satisfaction?

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(2) What are the greatest predictors of job satisfaction? (3) And can Herzberg's duality theory of motivators and hygiene factors be verified in a higher education context? The importance of this research is not only in testing Herzberg's duality theory and expanding our knowledge of this concept in higher education, but also, in pinpointing the levers to improve the worklife in a university. Thus, this research has both theoretical and practical implications for understanding higher education.

LITERATURE REVIEW

Understanding job satisfaction requires knowing some of the major debates in the field of industrial psychology. The concept of job satisfaction emerged in this area and Herzberg's duality theory is one of its major postulates. In higher education, job satisfaction, particularly among administrators, has been sparsely examined, and cumulatively the studies in this area suggest there is little unity in understanding job satisfaction in a college or university context. This paper begins by reviewing Herzberg's duality theory then summarizes the understanding of job satisfaction in higher education.

Herzberg's Duality Theory of Job Satisfaction

In 1968, Behling, Labowitz, and Kosmo reviewed the controversy surrounding Herzberg's duality theory and the more conventional uniscalar approach to measuring satisfaction. The debate began with the publication of Herzberg's book *The Motivation to Work* (1959), in which interviews with 200 engineers and accountants were outlined. Subjects were asked to describe "any kind of story you like—either a time when you felt exceptionally good or a time when you felt exceptionally bad about your job" (1959, 35). Over the course of twelve investigations in similar organizations, Herzberg classified the work dimensions into motivators and hygiene factors. Motivators were the satisfying events described in the interviews. They included *achievement, recognition, work itself, responsibility, advancement*, and *growth*.

When employees recalled a story where they felt "exceptionally bad" they often spoke of the following factors: *company policy and administration, supervision, relationship with supervisor, work conditions, salary, relationships with peers, personal life, relationships with subordinates, status*, and *security*. Herzberg classified these ten events as hygiene factors and he noticed that they were primarily disruptions in the external work context, while the motivators dealt with internal states of mind. Thus, Herzberg concluded his duality theory of job satisfaction which

contrasted with the traditional notion of factors impacting employees on a uniscalar continuum. For example, traditionally it was thought you could increase *salary, supervision*, or *company policy* and that would increase an employee toward greater job satisfaction. In Herzberg's mind you could not improve job satisfaction by improving any of the 10 hygiene factors; you could only improve job satisfaction by increasing the six motivators.

Furthermore, the absence of the motivators would not lead to job dissatisfaction, just not job satisfaction. For example, if an employee did not have *recognition* or *achievement* this would not lead to job dissatisfaction, but they were unlikely to be motivated either. Essentially, the six motivators and ten hygiene factors were working in two different realms in affecting job attitudes. Herzberg's concept was a radical departure from current thinking (Behling et al., 1968) and is summarized in Herzberg's statement that, "The opposite of job satisfaction is not job dissatisfaction but, rather, *no* job satisfaction; and similarly, the opposite of job dissatisfaction is not job satisfaction, but *no* job dissatisfaction" (1987, 4).

A number of other researchers were able to verify Herzberg's motivator-hygiene duality, and they were summarized in his 1966 book *Work and the Nature of Man*. However, Herzberg was highly criticized by psychologists who said he had investigated a narrow range of jobs, and used only one measure of job attitudes (Ewen, 1964). Researchers also argued that Herzberg was uncovering people making themselves "look good" by attributing positive events to internal factors and negative experiences to external events (Vroom, 1964). Ultimately, the two camps of psychologist diverged dramatically, and in the end, different results would come from different research techniques. When Herzberg's critical-incident method of interviewing employees was used it gave results that supported his duality theory. Just as consistently, research gathered using a uniscalar model would conflict with Herzberg's theory (Behling et al., 1968).

Job Satisfaction in a Higher Education Context

In a higher education context, faculty job satisfaction has been the primary focus of research (Austin and Gamson, 1983). Hagedorn (1994) tested a causal model among faculty at different stages of career development and found that satisfaction with salary, total work hours, and support of colleagues affected the level of stress. The level of stress, in turn, impacted satisfaction. Olsen, Maple, and Stage (1995) found a direct effect between faculty job satisfaction and the intrinsic variables of control over one's career and satisfaction of academic work.

Complementing the studies of faculty worklife, most of the research on administrators examines particular roles such as department chairs or academic deans. The role of the president has been comprehensively examined—a role which differs greatly from other administrators. In research about job satisfaction among administrators more generally, Volkwein, Malik, and Napierski-Prancl (1998) find that perceptions of teamwork and interpersonal work stress are the best predictors of satisfaction. In their study, Volkwein et al. sought to assess the affect of the regulatory climate on job satisfaction but found no direct relationship, a notion that supports Herzberg's theory. Instead, teamwork was positively associated with satisfaction while interpersonal work stress had a negative link. Volkwein and Parmley (2000) found similar results in a study comparing administrative satisfaction in public and private universities. The fact that teamwork, which could be similar to Herzberg's *relationship with co-workers*, is positively associated with satisfaction partly disconfirms Herzberg's duality theory.

In examining morale, Johnsrud and Rosser (1999) found that perceptions of recognition, discrimination, external relations, and mobility were the best explanatory variables of job satisfaction among midlevel administrators. Volkwein and Zhou (2003) tested a model of administrative job satisfaction and found that organizational, environmental, and individual traits proved to be less influential than features such as teamwork, job security, and interpersonal harmony. They concluded that "the model suggests that overall satisfaction is the product of a complex balance of many ingredients" (166). Finally, in examining union membership, Vander Putten, McLendon, and Peterson (1997) discovered that union-affiliated staff members perceive the work environment more negatively than non-union staff. In sum, these studies give no conclusive confirmation or disconfirmation of Herzberg's duality theory. On par, however, they do not indicate a clear delineation as his theory suggests.

In summarizing job satisfaction studies in higher education, Johnsrud (2002) reviewed the recent literature devoted to both faculty and administrative worklife and grouped the studies into three categories: those that describe and explore differences in the quality of worklife by personal characteristics (e.g. by sex, race/ethnicity, or tenure); those that determine the impact of the quality of worklife on attitudes (e.g. stress, morale, satisfaction, and commitment); and those that attempt to explain behavioral outcomes caused by the quality of worklife (e.g. turnover, productivity, and performance). This paper links the first and second category by exploring the effects of personal characteristics on job satisfaction and the effects of the perceived work environment on

job satisfaction. In sum, the higher education literature does not have a conclusive notion of what comprises job satisfaction among administrators in a college or university, and this study helps build our understanding of this phenomenon.

CONCEPTUAL MODEL AND RESEARCH QUESTIONS

A conceptual model was built to visualize the interrelationships of the variables and is based upon the preceding literature review (Spencer, 1997; Vander Putten et al., 1997; Volkwein and Zhou, 2003). The model, reflecting the literature review, contains the major constructs: personal characteristics, job characteristics, perceived work environment (intrinsic and extrinsic) and job satisfaction (see Fig. 1). Variables within each construct are identified later. Overall, the conceptual model frames the three research questions driving the study: How influential are personal characteristics and job characteristics on job satisfaction? What are the greatest predictors of job satisfaction? And is Herzberg's duality theory of motivators and hygiene factors verified in this higher education context?

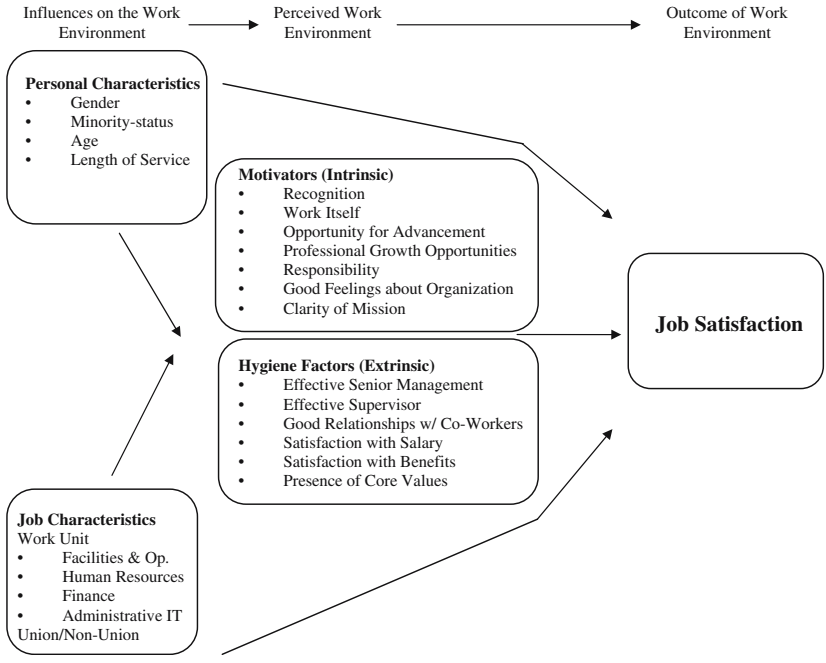

FIG. 1 Model for assessing job satisfaction.

The dependent variable in the model is job satisfaction which is comprised of (1) whether a job meets expectations, (2) is close to an ideal job, and (3) how satisfied a person is with their job. To conceptualize the impact on this dependent variable, the framework delineates the influence of personal characteristics on job satisfaction by addressing the impact of gender, minority-status, age, and length of service. Additionally, the effect of each of the personal characteristics is assessed on the 13 perceived work environment dimensions. Second, the influences of job characteristics (work unit and union-status) are examined on both job satisfaction and the perceived work environment. Finally, controlling for the influence of personal and job characteristics, the conceptual model partitions the 13 work environment dimensions into Herzberg's motivators and hygiene factors to examine their relative influence on the outcome variable.

One limitation of the model is that the effects of environmental conditions such as state policy and economic climate are not considered. The effect of the external environment was recently examined by Volkwein and Parmley (2000) who examined whether administrators in public higher education had different levels of job satisfaction from their counterparts at private colleges and universities. By excluding the environment, the model is essentially a closed-system view of the organization (Scott, 2002). Mitigating this limitation are two considerations. First, this study is primarily interested in the internal aspects of an organization and the psychological states that carry the most predictive weight on job satisfaction, rendering the environment of secondary importance. Second, the population of business operations is not likely to be in direct contact with the external environment compared with development officers, admissions staff, and senior administrators. However, increases in accounting standards in the earlier half of this decade may have influenced financial employees within this sample.

An additional limitation of the research is that although demographic differences are examined, the impact of personality on job satisfaction is not included. Therefore, the effect of temperamental predispositions to attitudinal outcomes in a work context is unknown. It is likely that previous life experiences—including socialization before entering the labor market as well as past work experience—influence a person's evaluation of their job satisfaction. Finally, there is no variable to address differences caused by administrative rank. On average, managers may have different predictors of job satisfaction in comparison to technical employees. However, age and unionization may act as proxies for this variable in the conceptual model.

METHODOLOGY

Research Approach & Instrument

To test the conceptual model and research questions a survey was conducted of the business operations employees at a large, public research university. The survey was distributed primarily online although paper surveys were available and completed by a small percentage of the sample. The 109 questions of the survey were written by an internal team which was led by an organization development specialist in business operations along with a customer satisfaction consulting firm.

The survey covered the topics of training and development; recognition and praise; collaboration and teamwork; communication; alignment with mission and goals; and feelings about one's job (a complete survey is available from the author upon request). The questions ranged from *strongly disagree* to *strongly agree* on a 10-point Likert scale. In addition to the 109 questions, the following six demographic items were included: area of employment, union membership, sex, age, being a member of a racial or ethnic minority, and length of service at the university.

Population and Sample

The survey was administered to the business operations division comprised of 36 units that report to an executive vice president. Totaling 2754 employees in the administrative division, the overall response rate was 79% ($N = 2180$). The response rates varied by unit, from 66% in facilities & operations to 86% in human resources, with 193 respondents not indicating a unit. Removing non-responders of work unit reduced the usable response rate to 77.6%. With a relatively high response rate, the non-respondent bias is likely negligible.

It should be noted that the specific population used in this study, business operations, is likely to vary from different subcultures in the university. Therefore, the sample population may represent a different sensitivity to job satisfaction predictors than individuals in different university departments. Although this would contradict the universality of Herzberg's theory, the study does not address this concern. For example, employees in academic affairs may show a greater sensitivity to *professional growth opportunities* impacting their job satisfaction, while employees in business operations may be more sensitive to *effective senior management*. Thus, the predictors of job satisfaction may be partly contingent upon the subculture of the university department (Table 1).

TABLE 1. Response Rates by Work Unit

Work Unit	# of Emp.	% by Job Class.	# of Resp.	Response Rate
Finance	550	20%	430	78%
Facilities & operations	1702	62%	1127	66%
Human resources	176	6%	152	86%
Administrative IT	326	12%	278	85%
Total	2754	100%	2180	79%
Unidentifiable (removed)	(193)		(193)	
Total working sample	2561		1987	77.6%

Analysis

The first stage of analysis was data reduction through principle component analysis (PCA) with a direct oblimin rotation on the job satisfaction and perceived work environment questions. This process was conducted to identify factors approximate to Herzberg's work environment dimensions and resulted in 13 factors. A questionnaire item was included into a factor for which it had the highest loading and if the loading was above .4. The 13 factors that resulted are displayed in Table 2. Values for each factor were put on a consistent scale by taking the sum of the scores on the items multiplied by the factor loadings and dividing it by the sum of the loadings. Dividing the weighted total of the items by the sum of the loadings puts the factors on a consistent 1–10 scale and allows for comparison. Overall, 75 of the 109 questions converged into the 13 factors. For all of the factors a higher score indicates a more positive response. Reliability tests were conducted for each of the 13 factors, and they range from .76 to .97, with an average reliability of .89. The reliability of each factor is also reported in Table 2.

In addition to the 13 perceived work environment factors, three items converged into a job satisfaction index. The three questions that converged were: (1) Imagine your ideal job. How well does your current position compare to that ideal job? (2) Overall, how satisfied are you with your job? (3) Consider all the expectations you had when you started your current job. To what extent does your current job fall short or exceed those expectations? The factor loadings of these items and the reliability of the dependent variable is reported in Table 2.

Table 3 illustrates the connection of the factors found in the survey with Herzberg's motivators and hygiene factors. Of Herzberg's

TABLE 2. Factors and Items Resulting from Factor Analysis of Perceived Work Environment and of Job Satisfaction

	Loading
Job Satisfaction (α = .874)	
Imagine your ideal job. How well does your current position compare to that ideal job?	0.690
Overall, how satisfied are you with your job?	0.670
Consider all the expectations you had when you started your current job. To what extent does your current job fall short or exceed those expectations?	0.662
Motivators	
Recognition (α = .823)	
My customers recognize my good work	0.715
My contributions are valued by members of the Univ. community outside of business & operations	0.635
In the last 7 days I have received recognition or praise for doing good work	0.528
I get appropriate recognition when I have done something extraordinary	0.446
Expressions of thanks and appreciation are common in my unit/department	0.405
Work Itself (α = .920)	
I enjoy the type of work I do	0.758
My job is interesting	0.731
My job gives me a sense of accomplishment	0.633
I make a difference in my unit/department	0.507
Opportunities for Advancement (α = .920)	
Opportunities for advancement or promotion exist within the University	0.798
I know what is required of me to advance within the University	0.797
Internal candidates receive fair consideration for open positions	0.650
Information about job vacancies within the University is readily available	0.528
Professional Growth Opportunities (α = .893)	
My unit/department offers the training or education that I need to grow in my job	0.823
I have received the necessary training to do my job well	0.768
I have had opportunities at work to learn and grow in the past year	0.748
There is someone at work who encourages my development	0.702
Someone has talked to me about my progress in the past year	0.666

TABLE 2. (*Continued*)

	Loading
Responsibility (α = .870)	
I have control over how I do my work	0.699
My opinion counts at work	0.590
I have a say in decisions that affect my work	0.640
The physical environment allows me to do my job	0.624
I have the necessary resources, tools or equipment to do my job	0.613
Good Feelings about Organization (α = .946)	
I feel a strong sense of belonging to the University	0.817
I enjoy discussing the University with people who do not work here	0.810
I have a strong commitment to the University	0.776
I am proud to work for the University	0.751
I care about the future of the University	0.730
Clarity of Mission (α = .913)	
I understand how my work supports the mission of business operations	0.754
I understand how my work supports the University's mission of research, teaching and service	0.745
I understand how my work supports the mission of my unit/department	0.701
I know what is expected of me at work	0.535
Work is organized so that each person can see the rel. between his/her job and the goals of the org.	0.519
The goals of my unit/department are clear to me	0.435
Hygiene Factors	
Effective Senior Management (α = .955)	
Senior management keeps employees informed	0.764
Senior management effectively communicates the goals and strategies of our unit/department	0.722
Senior management demonstrates leadership practices that are consistent with the stated values of our unit/department	0.689
Effective Supervisor (α = .970)	
My supervisor communicates well	0.891
My supervisor manages people effectively	0.878
My supervisor is an effective decision-maker	0.858
Overall, how would you rate your supervisor?	0.851
My supervisor creates an environment that fosters trust	0.836
My supervisor is approachable and easy to talk with	0.819
My supervisor cares about me as a person	0.766

TABLE 2. (*Continued*)

	Loading
My supervisor is ethical in day-to-day practices	0.764
My supervisor gives me constructive feedback on my performance	0.749
My supervisor deals effectively with poor performance	0.748
My supervisor treats me with respect	0.743
My supervisor recognizes me for doing good work	0.697
My supervisor considers my ideas	0.682
My supervisor trusts me	0.649
My supervisor has a clear view of where our department is going and how to get there	0.567
Good Relationships with Co-workers (α = .933)	
I trust my co-workers	0.904
I am consistently treated with respect by my co-workers	0.888
I can count on my co-workers to help out when needed	0.882
My co-workers and I work as part of a team	0.849
People care about each other in my unit/department	0.787
Someone in my unit/department cares about me as a person	0.586
When I joined my unit/department, I was made to feel welcome	0.566
My workgroup collaborates effectively with other workgroups or departments	0.525
Satisfaction with Salary (α = .833)	
My salary/pay rate is competitive when compared to similar jobs at other organizations	0.860
I am fairly paid for the work I do	0.846
Salary/pay increases are appropriate	0.795
I understand how my base salary is determined	0.636
My salary/pay rate is a significant factor in my decision to stay at the University	0.617
Satisfaction with Benefits (α = .840)	
The University's benefits package meets my needs	0.855
My costs associated with the benefits plan (co-pays, deductibles, premiums) are reasonable	0.796
The benefits package is a significant factor in my decision to stay at the University	0.761
The University's benefits package has been adequately explained to me	0.636
Presence of Core Values (α = .756)	
Ignoring business & operations core values at work will get you in trouble	0.826
There is a clear and consistent set of values that governs the way we do business.	0.648
All units/departments of business & operations share common values	0.514

TABLE 3. Comparison of Herzberg's Classification and Factors Resulting from Factor Analysis

Herzberg's Classifications	Factor Indices Found in Factor Analysis (See Table 2 for Questions Included in Each Factor)
Motivators	
Recognition	Recognition
Work Itself	Work Itself
Advancement	Opportunity for advancement
Growth	Professional growth opportunities
Responsibility	Responsibility
Achievement	No related questions on survey
Non-matching Motivators Found in Survey	Clarity of mission Good feelings about organization
Hygiene Factors	
Company Policy and Administration	Effective senior management Satisfaction with benefits
Supervision/Relationship with Supervisor	Effective supervisor
Salary	Satisfaction with salary
Relationship with Peers	Good relationships with co-workers
Personal Life	No comparable factor emerged
Status	No related questions on survey
Security	No related questions on survey
Relationship with Subordinates	No related questions on Survey
Work Conditions	No comparable factor emerged
Non-matching Hygiene Factor Found in Survey	Presence of core values

motivators, five of the six dimensions were found by completing PCA. *Achievement*, the missing motivator, did not have related questions in the survey. In addition, *clarity of mission* and *good feelings about the organization* emerged within the results of PCA and were classified as intrinsic factors. Regarding Herzberg's hygiene factors, less congruence was found between the survey and his classification. No approximation was found for *personal life, status, security, relationship with subordinates*, and *work conditions*. Of these five hygiene factors, three dimensions—*status, security*, and *relationship with subordinates*—did not have related questions in the survey. The survey contained comparable questions about an employee's *personal life* and *work conditions*, but they did not emerge into a robust, single factor. *Presence of core values* was a

latent factor that converged in the PCA and was included as a hygiene factor because the three items comprising *core values* do not seem to intrinsically lead to a satisfying work environment, but the absence of them, and the unethical behavior that would ensue, could lead to a dissatisfying environment.

In Table 4 personal characteristics were first analyzed to investigate the research questions of the conceptual model. *T*-tests were used to identify the significant differences among the categorical variables of *gender* and *minority status* with the 13 work environment factors and job satisfaction. Second, the continuous variables of *age* and *length of service* were correlated with the 13 work environment dimensions and job satisfaction.

In Table 5 the impact of job characteristics is analyzed. First, ANOVA assesses the mean of the 13 work environment factors and job satisfaction among the four work units of finance, human resources, facilities & operations, and administrative information technology. Second, *T*-tests examine the mean differences among the 13 work environment factors and job satisfaction by the categorical variable of union-status.

Finally, in Table 6 the relative impact of the 13 factors controlling for personal and job characteristics is assessed using a multiple regression model to evaluate the predictive weight of the constructs in the conceptual model. In the regression analysis, cases were excluded listwise to be most conservative, resulting in an $N = 1132$, and facilities & operations is used as the baseline category for work unit in the regression model.

RESULTS

This study examines relationships between an employee's personal characteristics, job characteristics, perceived work environment, and job satisfaction. The results are presented in the order of the research questions: (1) How influential are personal characteristics and job characteristics on job satisfaction? (2) What are the greatest predictors of job satisfaction? (3) And can Herzberg's duality theory of motivators and hygiene factors be verified in a higher education context?

Personal Characteristics

Table 4 reports the relationship between the characteristics of gender, minority-status, age, and length of service on job satisfaction. Regarding gender differences, females are more satisfied on 12 of the 13 work

TABLE 4. *T*-tests and Correlations of Personal Characteristics with Perceived Work Environment and Job Satisfaction

							Age			Length of Service		
Factor	Male	Female	*T*-test	Non-minority	Minority	*T*-test	*r*	Sig.	N	*r*	Sig.	N
Motivators												
Recognition	6.0	6.5	**	6.3	5.9	*	0.01		1756	−0.06	*	1798
Work Itself	7.9	8.1	*	8.1	7.4	**	0.11	**	1805	0.05	*	1851
Advancement	6.3	7.0	**	6.7	6.0	**	−0.04		1497	−0.05	*	1540
Professional Growth Opportunities	5.9	7.1	**	6.5	6.0	**	−0.05	*	1770	−0.11	**	1813
Responsibility	6.9	7.4	**	7.2	6.8	**	−0.01		1787	−0.04		1833
Good Feelings about Organization	8.1	8.5	**	8.3	8.0	**	0.03		1790	−0.01		1836
Clarity of Mission	7.4	8.0	**	7.7	7.4	**	0.04		1779	0.01		1825
Hygiene Factors												
Effective Senior Management	5.5	6.3	**	6.0	5.4	**	−0.04		1784	−0.07	**	1828
Effective Supervisor	6.7	7.1	**	6.9	6.6	*	−0.02		1686	−0.05	*	1729
Good Relationships with Co-Workers	7.3	7.8	**	7.6	6.9	**	−0.01		1754	−0.02		1796
Satisfaction with Salary	5.6	5.5	–	5.7	5.1	**	0.04		1758	−0.01		1806
Satisfaction with Benefits	7.0	8.0	**	7.6	7.1	**	−0.07	**	1787	−0.10	**	1837
Presence of Core Values	6.2	6.5	**	6.3	6.1	–	−0.01		1722	−0.09	**	1764
Job Satisfaction	5.9	6.1	*	6.1	5.4	**	0.08	**	1808	−0.01		1735
	N = 1031 55%	*N* = 835 45%		*N* = 1522 85%	*N* = 277 15%							

1 = Strongly Disagree; 10 = Strongly Agree; *$p < .05$ (2-tailed); **$p < .01$ (2-tailed).

TABLE 5. ANOVA of Work Unit and *T*-test of Union-status with Perceived Work Environment and Job Satisfaction

Factor	Finance	Facilities & Op.	Human Res.	Admin. IT	Welch F*	Sig. F	Non-union	Union	*T*-test
Motivators									
Recognition	6.6	5.8	7.3	6.6	31.1	**	6.6	5.4	**
Work Itself	8.1	7.8	8.7	8.1	13.7	**	8.1	7.6	**
Advancement	7.3	6.1	7.3	6.7	32.0	**	7.0	5.4	**
Prof. Growth Opportunities	7.5	5.7	7.3	7.2	79.8	**	7.1	5.0	**
Responsibility	7.7	6.7	7.8	7.5	39.6	**	7.5	6.4	**
Good Feelings about Org.	8.6	8.0	8.7	8.6	15.6	**	8.5	7.7	**
Clarity of Mission	8.3	7.3	8.2	7.9	37.5	**	8.0	6.9	**
Hygiene Factors									
Effective Senior Management	6.9	5.1	6.9	7.0	74.7	**	6.6	4.4	**
Effective Supervisor	7.2	6.5	7.5	7.3	19.2	**	7.2	6.3	**
Good Rel. with Co-workers	8.0	7.1	8.2	8.1	39.8	**	7.9	6.8	**
Satisfaction with Salary	5.4	5.4	6.1	6.1	9.9	**	5.6	5.5	–
Satisfaction with Benefits	8.0	7.0	8.5	8.1	58.5	**	8.0	6.4	**
Presence of Core Values	6.8	6.1	6.6	6.3	14.7	**	6.5	5.9	**
Job Satisfaction	6.1	5.8	6.5	6.0	6.2	**	6.1	5.6	**
	$N = 430$	$N = 1127$	$N = 152$	$N = 278$			$N = 1313$	$N = 551$	
	22%	57%	8%	14%			70%	30%	

**Note:* Unequal group sizes violated the assumption of homogeneity of variance. Therefore, Welch *F*-ratio was used.
***p* < .01 (2-tailed).

TABLE 6. Predictors of Job Satisfaction ($N = 1132$)

	B	SE B	Beta	Sig.
Constant	0.24	0.46		
Personal Characteristics				
Gender	0.00	0.11	0.00	
Minority	−0.17	0.14	−0.03	
Age	0.14	0.05	0.07	*
Job Characteristics				
Finance Dummy Variable	−0.06	0.13	−0.01	
Human Resources Dummy Variable	−0.16	0.18	−0.02	
Administrative IT Dummy Variable	−0.24	0.15	−0.04	
Union	−0.09	0.14	−0.02	
Motivators				
Recognition	0.02	0.03	0.02	
Work Itself	0.36	0.03	0.35	*
Opportunity for Advancement	0.14	0.03	0.15	*
Professional Growth Opportunities	0.05	0.03	0.06	
Responsibility	0.15	0.04	0.14	*
Good Feelings about Organization	−0.02	0.03	−0.02	
Clarity of Mission	−0.14	0.04	−0.13	*
Hygiene Factors				
Effective Senior Management	0.08	0.02	0.10	*
Effective Supervisor	0.15	0.03	0.16	*
Good Relationships with Co-Workers	−0.02	0.03	−0.02	
Satisfaction with Salary	0.11	0.02	0.12	*
Satisfaction with Benefits	−0.03	0.03	−0.03	
Presence of Core Values	0.00	0.03	0.00	
$R^2 = .46$				

*$p < .001$.

environment dimensions with *salary* being the only variable where women are not more satisfied. These results mirror Spencer's finding that business operations at a university had the greatest number of significant differences based on gender (1997, 100). Of the 13 factors, the greatest difference between men and women is in their perception of *professional growth opportunities*, with women being substantially higher in this perception. Overall, the results suggest that females in business operations are much more satisfied with their work experience.

Regarding minority perceptions of the work environment, minorities are significantly lower on 12 of the 13 dimensions. The three greatest perceived differences between minorities and non-minorities are in *advancement*, *relationships with co-workers*, and the *work itself*. The only

area where minorities and non-minorities are not significantly different is in the perception of the *presence of core values*. Overall, minorities have significantly lower job satisfaction with a mean of 5.4 compared to 6.1 for non-minorities.

Age has a significant positive correlation (although of a small magnitude) with the *work itself* and job satisfaction. The results suggest that older employees are well-adjusted to their job and obtain more intrinsic rewards from it. There is also a significant negative correlation (although of a small magnitude) between age and the *perception of professional growth opportunities* and *satisfaction with benefits*.

Length of service is not significantly correlated with job satisfaction although there are seven negative correlations that are significant with the 13 perceived work environment dimensions (although of a small magnitude.) Therefore, as length of service increases the following perceptions decrease: *recognition, advancement, professional growth opportunities, effective senior management, effective supervisor, satisfaction with benefits*, and *presence of core values*. The only positive and significant correlation is between length of service and the *work itself*.

Job Characteristics

Table 5 reports the second aspect of the conceptual model—the effect of job characteristics on the 13 work environment dimensions and job satisfaction. Regarding the influence of work unit, employees in facilities & operations are less satisfied than people in finance, human resources, and information technology. In fact, facilities & operations ranks lower on all 13 work environment factors with the largest difference being their perceptions of *senior management's effectiveness, advancement*, and *professional growth opportunities*. Table 5 also indicates that human resource employees are the most satisfied on 8 of the 13 factors and in overall job satisfaction. Relatively speaking, they are the most satisfied with *recognition* and *benefits*. The item with the most parity among the four work units is in *satisfaction with salary*.

Regarding union-status, Table 5 reports that unionized employees are less satisfied than non-union members. In fact, union workers rank below non-union staff on all 13 of the work environment dimensions. The low level of satisfaction among union members replicates the finding of Vander Putten et al. (1997). Perhaps not surprisingly, the largest difference between the 13 factors is in the perception of the *effectiveness of senior management*. Union members have a 4.4 rating while non-union members average 6.6. It is unclear whether the perception of ineffective management forms unions or being in a union creates this perception.

Both factors probably have an influence. Similar to work unit and gender, the only area of equal perceptions between union and non-union members is in *satisfaction with salary*.

Predicting Job Satisfaction

After determining that several personal characteristics and both job characteristics have a significant relationship with most dimensions of the perceived work environment and with job satisfaction, the second research question explores what relative influence personal characteristics, job characteristics, and the perceived work environment have on job satisfaction. The regression model helps answer this question and the results are reported in Table 6. The model accounts for a robust amount of the variance in explaining job satisfaction with an $R^2 = .46$. Among the personal characteristics, the only variable that has a significant positive coefficient is age. Gender and minority-status no longer exhibit an influence in comparison to the other variables. The length of service variable is not included in the regression model because the previous analysis indicated it did not have a significant correlation with the dependent variable. Regarding job characteristics, both work unit and union-status do not have significant coefficients with job satisfaction.

Concerning the perceived work environment dimensions, the *work itself* is the most significant and powerful predictor of job satisfaction with a $\beta = .35$. Of the seven motivators three variables have positive and significant coefficients: the *work itself*, *opportunity for advancement* and *responsibility*. One of the motivators, *clarity of mission*, has a negative and significant beta of $-.13$. Of the six hygiene factors three are significant and positive predictors of job satisfaction: *effective senior management, effective supervisor*, and *satisfaction with salary*. In sum, the results indicate that the perceived work environment variables are more important than personal characteristics or job characteristics in predicting job satisfaction. Furthermore, the results do not indicate a clear distinction of job satisfaction predictors as Herzberg's theory suggests, although the *work itself* does have the most predictive power.

DISCUSSION

Practical Implications

Given that job satisfaction is important to the effectiveness and vitality of an institution, there are numerous practical implications of this

research. First, job satisfaction is important, not only because of a humanistic desire to improve the quality of worklife, but also its potential impact on outcomes such as productivity and turnover (Johnsrud, Heck, and Rosser, 2000). Thus, administrators concerned with the effectiveness and vitality of their institution would be concerned with this phenomenon, and given the resource constraints at every college and university, wisely using money to impact job satisfaction will aid in their overall functioning.

Therefore, given limited resources, administrators should focus on two factors. First, although difficult to directly impact, improving the *work itself* is paramount. It is the strongest predictor in the model and past research has shown it has the greatest impact. The ability to change this variable is difficult, but job redesign offers a viable framework for this endeavor (Hackman, Oldham, Janson, and Purdy, 1975; Hackman & Oldham, 1980). Second, both *effective supervisors* and *senior management* are significant predictors of job satisfaction. There are 15 items in the supervisor factor, and its impact is second only to the *work itself*. Thus, supervisor training to improve communication, management, and decision-making is a significant lever to impact job satisfaction in this context.

In addition to the perceived work environment four personal characteristics and two job characteristics were explored. The regression model indicates that age is the most significant predictor of job satisfaction. Janson and Martin (1982) suggest the positive association between age and satisfaction is caused by the declining expectations of older workers. In support of this hypothesis, both age and length of service are negatively correlated with professional growth opportunities. These results replicate the findings of more comprehensive studies of worker dissatisfaction due to the structure of opportunity (Kanter, 1977), and are likely a byproduct of non-faculty members employed in a professional bureaucracy (Mintzberg, 1979). This perception was most pervasive in facilities & operations, whose jobs are very technical in nature and offer few avenues for professional growth.

In the regression model of Table 6, the implications of examining personal and job characteristics suggest only one factor remains significant while the perceived work environment has a much greater influence. This is good news for those trying to improve job satisfaction, because this research implies that it is primarily influenced by perceptual factors (which are somewhat controllable) and less influenced by the more immutable determinants like personal and job characteristics.

Theoretical Implications

In examining the differences between Herzberg's motivators and hygiene factors, this research duplicate Ewen's study that found only one factor, the *work itself*, acted in accordance with Herzberg's conceptualization (1966). While none of the hygiene factors in the model are as powerful as the *work itself*, the results do not support a clear delineation between intrinsic and extrinsic dynamics as Herzberg's theory suggests. Based on this result there are two theoretical implications to be learned.

First, Herzberg's duality theory is intriguing precisely because it is simple and general, but in this context it was not accurate in predicting a clear delineation of job satisfaction determinants. Researchers have moved toward more complex formulations of job satisfaction that forgo the simplicity of Herzberg's theory. For example, Kalleberg (1977) delineates the job environment into six dimensions: (1) the *intrinsic* dimension, which refers to characteristics associated with the task itself; (2) the *convenience* dimension, which refers to good hours, pleasant physical surroundings, and convenient travel; (3) the *financial* dimension which includes items such as pay, fringe benefits, and job security; (4) *relationships with co-workers* and whether there are chances to make friends and meet social needs; (5) a *career* dimension that includes items such as whether the chances for promotion are good; and (6) *resource adequacy* which refers to whether there is enough help, equipment, and information required to adequately complete the job.

This example illustrates that as we move toward greater complexity in describing job satisfaction we lose simplicity. This reflects Thorngate's (1976) postulate that it is impossible for a theory of social behavior to be simultaneously general, accurate, and simple. Researchers can secure two of the three virtues, but automatically concede the third (Weick, 1979). For example, case studies are both accurate and simple but forgo being generalizable. While psychoanalytic theory is general and accurate but certainly not simple. Herzberg's theory demonstrates simple-general research, but what use is a theory if it is not accurate? Metaphors and theories such as loose coupling (Weick, 1976) and Garbage Cans (Cohen, March, and Olsen, 1972) are useful because they help us talk about complex phenomena is simple ways. Yet, when pressed they seemingly can be applied to everything, yet do not precisely explain anything. Herzberg's theory asks us to question whether the determinants of job satisfaction lie solely in the job itself (the "intrinsic" view), or whether satisfaction is the consequence of an interaction between the

worker and his/her work environment. This is a simple, yet important distinction, and illustrates that testing a theory is not always an appropriate means to determining its value.

The second theoretical implication, and one that past research on job satisfaction has shown, is that methodology profoundly affects the results obtained. Past studies of job satisfaction indicate that using Herzberg's critical-incident method supports his conclusions, while uniscalar surveys of satisfaction do not support his theory (Behling et al. 1968). The distinction between the two approaches is researching an "incident" that leads to satisfaction versus a stable, attitudinal entity called "job satisfaction." An "event" and a "stable attitude" are different psychological phenomenon. Therefore, taking a theory that describes "events" that are motivating or dissatisfying and applying it to the "stable attitude" of job satisfaction has dubious worth. Therefore, an implication of this study is to be mindful of the approach you are taking because theoretical findings are highly contingent upon the method used, more so than many social scientists might want to believe.

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