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BENEFIT SYSTEM EFFECTS ON EMPLOYEES' BENEFIT KNOWLEDGE, USE, AND ORGANIZATIONAL COMMITMENT

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ABSTRACT: We identified four attributes of benefit systems thought to influence employee attitudes and behavior: employee participation, system quality, communication quality, and benefit importance. Survey data from 974 employees of a Fortune 500 energy industry firm supported a partially mediated model in which these benefit system features exerted both indirect and direct effects on benefit knowledge and use, as well as on affective and continuance commitment. However, the findings differed across benefit system features and across types of benefits. Specifically, improving organizational communications about benefits appears more useful than increasing employee participation or improving benefit system service quality.

KEY WORDS: organizational commitment; employee benefits; social exchange; human resources management.

Effective compensation practices provide organizations with a competitive advantage by increasing their ability to attract and retain employees. However, compensation systems continue to increase in scope and administrative complexity and employers have become increasingly interested in benefit cost containment (cf. Bergmann, Bergmann, & Grahn, 1994). For example, in the United States, benefits have grown from approximately 3% of payroll in 1929 to an average of 27%, with some companies devoting 40% or more of their payroll to benefits (U.S. Department of Labor, 2001). Many social factors influence these costs,

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including rising health care costs, the aging of the baby boomer generation, increasing numbers of dual-earner and single-parent families, and growing demands for family-friendly benefits. Moreover, unlike fixed costs that can be depreciated, such as property and equipment, benefit costs usually rise at or above the rate of inflation (Parkin & Bade, 1992).

Given the costs associated with benefits programs, it is a bit surprising that there is relatively little research on benefits. Pay satisfaction studies consistently find distinct benefits factors (Dreher, Ash, & Bretz, 1988; Heneman & Schwab, 1985; Williams, McManus, Gordon, & McDaniel, 1999), suggesting the effects of benefits on employee attitudes and behavior are distinct from those of pay or other forms of compensation. Other studies show that employees' perceptions about their benefits are related to job satisfaction and organizational commitment (e.g., Barber, Dunham, & Formisano, 1992; Sinclair, Hannigan, & Tetrick, 1995; Ward & Davis, 1995). Although this research suggests employee perceptions about their benefits influence organizational effectiveness, the existing literature is small and there is a clear need for further research on benefit systems (e.g., Harris & Fink, 1994; Williams & MacDermid, 1994).

Miceli and Lane (1991) distinguished *benefit level satisfaction* from *benefit system satisfaction*. Benefit level satisfaction concerns perceptions about the quality and quantity of benefit coverage. In contrast, benefit system satisfaction refers to "how well the system by which the benefits are administered results in a favorable reaction by the employee" (p. 298). This includes policies and procedures used to determine which benefits to offer as well as systems used to administer benefits programs (e.g., claims procedures, enrollment processes).

The benefit level—benefit system distinction is theoretically significant as these constructs have different conceptual bases. Miceli and Lane suggested that benefit level satisfaction is a function of environmental (e.g., inflation, interest rates), personal (e.g., demographics), and administrative (e.g., communication) influences, whereas benefit system satisfaction reflects the efficiency and effectiveness of processes used to manage the benefits program. Some previous research supports Miceli and Lane's distinction, showing that benefit system and benefit level satisfaction have different antecedents and consequences (Danehower & Lust, 1995; Malos & Williams, 1994; Williams & Macdermid, 1994; Williams, Palmer, & Malos, 1995). In fact, attitudes toward benefit systems may predict benefit level satisfaction better than actual amounts of benefit coverage (Williams, 1995). However, despite the potential importance of benefit systems management, little is known about the psychological mechanisms shaping employees' perceptions of these systems.

There are several practical reasons to devote attention to benefit systems. Miceli and Lane's framework suggests that benefit level satisfaction is driven by factors organizations cannot easily influence.

Coupled with the costs of benefits and individual differences in benefit needs, their model implies that simply increasing coverage may not lead to intended improvements in retention or other outcomes. In contrast, benefit system perceptions relate to the functioning of internal administrative systems organizations can more easily control. Thus, perceptions about benefit systems may be both easier and more cost-effective to change than perceptions about levels of benefit coverage.

The quality of the benefit management system has several possible influences on an organization's ability to derive maximum psychological value from its benefits. For example, effectively managed systems help organizations realize the full value of their benefits programs by making it easier for employees to use their benefits (Miceli & Lane, 1991). Better-managed systems also should increase employees' knowledge about their benefits, leading to further advantages for organizations. Finally, when employees have no immediate personal need for a benefit, they may weigh qualities of the benefit system more heavily in evaluations of their compensation package (Tremblay, Sire, & Balkin, 2000).

Given these issues, Hagan (1997) encouraged employers to take a customer service approach to managing benefit systems. He described five service-related dimensions employees evaluate with respect to benefit systems: dependability, knowledge, convenience, efficiency, and advocacy. Dependability involves delivering what is promised when it is promised. Knowledge refers to the accuracy and amount of what employees know about the system. Convenience stipulates that the system should be easy to use. Efficiency involves providing timely communications and claims processing. Finally, advocacy requires the benefit system to be responsive to and considerate of employees' needs. These features are useful starting points for further empirical research. Our study builds on these features by describing four benefit system attributes and evaluating the relationship between these attributes and three outcomes of benefit system perceptions: benefit knowledge, benefit utilization, and organizational commitment.

BENEFIT SYSTEM CONSTRUCTS

We examined two indicators of benefit system efficiency—benefit communication quality and benefit service quality, and two indicators of benefit system effectiveness—employee participation and benefit importance. These concepts represent two core themes for benefit systems design—namely that high quality benefit systems should provide good customer service and be employee-focused (i.e., considerate of and responsive to employee needs and preferences). Poor quality systems may increase administrative costs for the company even as they deter employees from using benefits.

Benefit System Efficiency

In organizational theory literature, efficiency is typically described as a ratio of system inputs to outputs (cf. Pritchard, 1992). Thus, benefit system efficiency concerns employees' perceptions of outcomes relative to the amount of effort required to use the benefit system. Simply put, efficient systems are easier to use. Miceli and Lane describe several indicators of benefit system efficiency, including fast and hassle-free claims processing, clear communication procedures, and responsiveness to employee questions.

Benefit communication quality refers to employees' perceptions of the information disseminated by the organization about its benefits programs. Effective communication is critical for employees to fully understand and utilize their benefit packages and, as a result, is fundamental to a high quality benefit system. Moreover, employees who make use of their organization's benefit communication materials are more likely to be satisfied with their benefits (Harvell & Lust, 1995; Henessey, Perrewé, & Hochwarter, 1992; Rabin, 1994). We propose three indicators of communication system quality. First, benefit information must be accurate. Providing employees with inaccurate information can lead to confusion and resentment. Second, the information should be clear and comprehensible; employees who cannot understand their benefits system are not likely to use it effectively or to realize its full value. Third, information should be provided in a timely manner. For example, employees who have insufficient notice about enrollment period deadlines are more likely to be frustrated by the system and less likely to make effective changes to their coverage.

Whereas benefit communication quality refers to benefits-related information passed from the organization to employees, *benefit service quality* refers to employees' perceptions about using their benefits. As with communication quality, benefit service quality can be evaluated in terms of accuracy, ease, and timeliness. Hard to use or error prone claims procedures can discourage benefit usage, thereby reducing the value the company derives from offering the benefit. Moreover, drawn-out claims procedures decrease the present value of a benefit and employees may perceive such unwieldy systems as unresponsive to their needs.

Benefit System Effectiveness

Effectiveness is typically defined as performance relative to some standard or goal (Pritchard, 1992). From a retention management perspective, the central goal of a benefits system is to provide employees with benefits that are valuable enough to encourage them to remain with the company. As Miceli and Lane suggest, effective systems should account for individual differences in benefit preferences such that

employees receive "equitable though not necessarily equal, treatment (p. 301)." These criteria suggest that effective systems provide important benefits and involve employees in benefit system design.

Employee participation refers to the degree to which employees have input in the design and administration of the benefit system. In the organizational development literature, scholars have investigated and advocated participative management since the early 20th century (cf. Cardy & Selvarajan, 2001). Although the general benefits of participation have been questioned (Wagner, 1994), compensation literature still encourages organizations to involve their employees in compensation system design (Lawler & Jenkins, 1992). However, compensation research mostly focuses on pay, so relatively little is known about the benefits of employee involvement in benefit system design.

Employees who participate in the design of their benefits program should be more familiar with their benefit coverage, find their benefits easier to use, and be able to tailor their benefits to meet their personal needs. However, organizations also should derive symbolic benefits from encouraging participation. For example, the group-value model of procedural justice (e.g., Lind & Tyler, 1988) suggests that processes used to determine allocations of resources (e.g., benefits) influence employees' perceptions of organizational fairness. This model implies that employees will react more favorably to their organization when they have opportunities to participate in the design and administration of their benefits system.

Benefit importance refers to the psychological value employees place on their benefits. Consistent with Miceli and Lane (1991), we assume that the psychological value of a benefit to an employee reflects the capacity of the benefit to meet that employee's needs. Thus, employees should have more favorable perceptions of their benefits system when they receive benefits they value. Moreover, organizations that provide unneeded benefits are wasting resources and could even be perceived as unresponsive to employee needs. Thus, employees who receive benefits they regard as important should have more favorable reactions to the benefit system, use their benefits more frequently, and be more strongly attached to their organization.

BENEFIT SYSTEMS OUTCOMES

Benefit System Use

Organizations realize greater value from benefits programs when employees use them. For example, health benefits help minimize the number of days lost to employee illness and injury and childcare benefits

reduce work–family conflicts. Moreover, employees who use their benefits may perceive themselves to receive more benefits than those who do not use their benefits (Williams, 1995). Consequently, organizations should encourage employee benefit use both to facilitate productivity and to foster healthy employee–employer relationships. Our benefit system model implies that employees should be more likely to use benefits systems that are employee-focused (system effectiveness) and run smoothly (system efficiency).

Miceli and Lane's (1991) model and Williams' (1995) extension of that model both assume that the perceived desirability (i.e., importance) of a benefit is influenced by whether employees use the benefit. Thus, their models run the causal path from benefit use to benefit importance. Consistent with Miceli and Lane, we assume that employees are more likely to use benefits that help them meet their personal needs. However, we regard employees' benefit importance perceptions as indicative of the capacity of their benefits to meet their personal needs. We also assume that employees are more likely to use benefits that meet their personal needs. Consequently, for the purposes of testing our model, we included paths from benefit importance to benefit use.

> *Hypothesis 1*: Benefit use is positively related to benefit importance, employee participation, benefit service quality, and benefit communication quality.

Benefit Knowledge

Organizations cannot realize the full advantage of a competitive benefits program unless employees have sufficient knowledge about the benefit system (Danehower & Lust, 1996; Wilson, Northcraft & Neale, 1985). For example, Dreher et al. (1988) found the correlation between benefit coverage and satisfaction to be higher for individuals with accurate valuations and near zero for those with inaccurate valuations. This implies that increasing benefit coverage should only affect employees with sufficient knowledge about their benefits. Although HR executives believe employees know relatively little about their benefits (Lewis, 1989), some research contradicts this conclusion (Danehower & Lust, 1996). However, few studies have examined actual (rather than perceived) benefit knowledge and, given the increasing complexity of benefits systems, further research on benefit knowledge is clearly needed. We hypothesize that efficient and effective benefit systems promote employee knowledge and that employees who use their benefits should be more knowledgeable.

Hypothesis 2a: Benefit knowledge is positively related to benefit importance, employee participation, benefit service quality, and benefit communication quality.
Hypothesis 2b: Benefit knowledge is positively related to benefit use.

Organizational Commitment

From a retention perspective, organizational commitment should be a central goal of benefit systems management. Affective and continuance commitment (cf. Meyer & Allen, 1997) are perhaps the two most commonly studied forms of commitment and research has established links between these forms of commitment and turnover (Allen & Meyer, 1996; Cohen, 1997), citizenship behavior (Organ & Ryan, 1995), and job performance (Riketta, 2002). However, despite strong conceptual linkages between benefits systems and commitment and calls from both commitment (e.g., Meyer & Allen, 1997) and benefits (e.g., Williams & MacDermid, 1994) researchers, few studies have investigated the relationship between benefit coverage and commitment (exceptions include Grover & Crocker, 1995 and Sinclair et al., 1995). To our knowledge, no research has investigated the relationship between benefit system features and organizational commitment.

Affective commitment refers to employees' emotional attachments to their organizations and the extent to which employees identify with their organizations' goals and values. Social exchange theory suggests affective commitment stems in part from employees' assessments of their treatment by their organization (e.g., Eisenberger, Fasolo, & Davis-LaMastro, 1990). Thus, when employees feel their organization is committed to them and values their contributions, they reciprocate with affective commitment and associated behavior (retention, productivity, etc.).

The social exchange perspective suggests benefit coverage is an indicator of the quality of an employee's exchange relationship with his/her organization (Sinclair et al., 1995). However, organizational justice research implies that benefit system features also influence commitment (e.g., Konovsky & Cropanzano, 1991; Martin & Bennett, 1996). Thus, employees' perceptions of their benefit systems should convey information about their social exchange relationship with the organization such that employees with more positive perceptions of their benefit system should develop stronger affective attachments to the organization. Finally, given the points made earlier about how employees' benefit knowledge helps organizations derive psychological value from their benefits, affective commitment should be stronger for employees who are more knowledgeable about their benefit program.

Hypothesis 3a: Benefit communication quality, benefit system quality, employee participation, and benefit importance are positively related to affective commitment.
Hypothesis 3b: Benefit knowledge and benefit use are positively related to affective commitment.

Employees with high levels of continuance commitment feel they need to remain with the organization because of "sunk costs," such as levels of financial (e.g., pension benefits accrued) and non-financial investments (e.g., seniority), as well as the availability of alternative jobs (Meyer & Allen, 1997). High quality benefit systems should promote continuance commitment because they represent a "sunk cost" of organizational membership (i.e., something the employee must forgo to leave the company). Moreover, as employees become more familiar with their benefits system (e.g., through knowledge and use), they should experience a stronger sense of investment in the system.

Hypothesis 4a: Benefit communication quality, benefit system quality, employee participation, and benefit importance are positively related to continuance commitment.
Hypothesis 4b: Benefit knowledge and benefit use are positively related to continuance commitment.

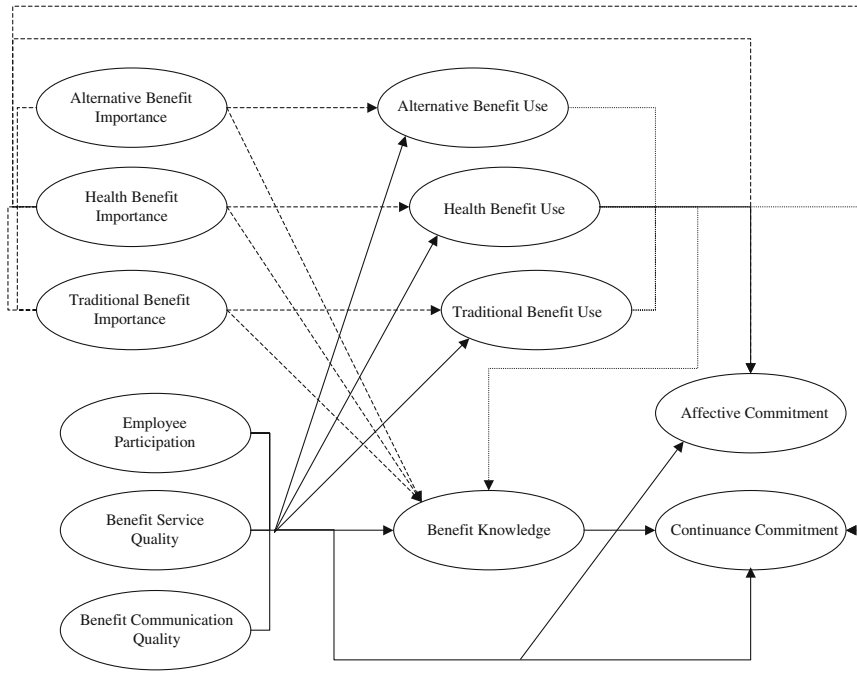
Present Study

Figure 1 summarizes the hypotheses (all relationships in the figure are positive). This model assumes that benefit system features influence organizational commitment both directly and through effects on benefit use and knowledge. The primary goal of our empirical research was to test this model. As noted earlier, our study is among the first to examine the organizational behavior implications of benefit system variables.

METHOD

We obtained the data for the present study from a Fortune 500 energy and telecommunications industry firm with locations across the United States. The Human Resources department conducted the survey as part of a comprehensive evaluation of the organization's compensation and benefits system (the third author was a member of the project team). At the time the study was conducted, the company offered a competitive cafeteria benefits package including (for example) coverage of 80% of

Figure 1
Partially Mediated Model of the Relationship between Benefit System Features, Organizational Commitment, Benefit Use, and Benefit Knowledge



medical premiums and a matching 401(k) contribution of up to 6% of employees' gross salary, as well as choices of combinations of several other benefits, many of which are described below.

Surveys were mailed to a stratified random sample of 3000 employees (approximately 1/6th of the workforce). The company notified employees about the survey in its benefits newsletter and the survey packet included a letter from the Vice President of Human Resources encouraging employee participation. Participants received a reminder post card after the survey was distributed and the organization provided participants who returned surveys with a jacket including a special logo designed for the project. A total of 1035 employees returned surveys, for a response rate of 35%. The participants represented a variety of occupations including oil and gas engineers, pipeline maintenance personnel, accountants, human resource professionals, computer systems analysts, telecommunications, and video specialists. Of the participants, 67% were male, 90% were Caucasian, and 80% were married. Of the participants, 39% held a high school diploma, 13% held an Associates degree, 37% held a Bachelors degree, and 10% held a

graduate degree. Using a query of the organization's Human Resource Information System, we compared the sample to the organization with respect to ethnicity, gender, and age. The large organization size (N = approximately 18,000) rendered significance tests impractical, but the survey sample closely matched the organization (i.e., within 3–5% in each subcategory) on these characteristics, providing some evidence of representativeness.

Measures

Appendix A includes all items developed for this study except the benefit knowledge items (we decided not to include these items because of space considerations, but they are available from the first author). The benefits items were developed based on conversations with benefit system administrators from the participating organization and drew from concepts in prior literature (e.g., Sinclair et al., 1995; Williams et al., 1995). The items reflect the organization's specific benefits, vendors, and systems and, as a result, they are unique to the context of our study.

Benefit Communication Quality

We measured benefit communication quality with three subscales capturing different aspects of the company's benefit communications. Participants indicated whether they received accurate information, timely information, and easy to understand information about 12 different benefit vendors and/or service providers. Participants rated each of the 12 benefits on all three attributes using the same seven-point agreement scale (1 = Strongly disagree; 7 = Strongly agree). We calculated a scale score for all participants who responded to at least one attribute for each benefit (see discussion of missing data procedures below). Total scores were calculated as the mean of the three subscales (α = .95).

Benefit Service Quality

Participants evaluated the quality of the benefit system by rating their experiences with certain benefits and/or third party vendors on a seven-point agreement scale (1 = Strongly disagree; 7 = Strongly agree). This scale focused on three attributes of the benefit system: accuracy, timeliness, and ease of use. Benefit system accuracy was measured with eight items reflecting the quality of the organization's benefit claims processes. Timeliness was measured with two items concerning whether employees believed benefit claims were processed quickly. Seven items assessed the ease of using the benefit system. Because the accuracy, timeliness, and ease of use measures were highly correlated (r ranged from .53 to .68), we calculated the mean of these three scales (α = .79) to form the total scale score.

Employee Participation

We assessed employee participation with four items asking employees whether the company takes their needs and desires into account when making decisions about benefits and whether they feel they have the opportunity to provide input into the benefit program. Participants rated each item on a seven-point agreement scale (1 = Strongly disagree; 7 = Strongly agree). A principal components analysis of these items extracted one factor accounting for 58% of inter-item variability with item loadings from .69 to .82 (α = .75).

Benefit Importance

Participants used a seven-point scale (options ranging from 1 = very unimportant to 7 = very important) to indicate how important each of 12 benefits was to them. A principal components analysis of these items suggested three factors. We used promax rotation to help interpret the factors. The first factor (*alternative benefit importance*, α = .79) accounted for 28% of the variance and included non-traditional benefits such as legal and education services, employee assistance benefits, and flexible childcare reimbursement accounts. The second factor (*traditional benefit importance,* α = .74) accounted for 17% of the variance and included pension plan, sick leave, and vacation. The third factor (*health benefit importance*) accounted for 9% of the variance and included medical, dental, and vision benefits. However, dropping the vision benefit item substantially increased the reliability of the scale (α increased from .52 to .79). Given the low correlations among the importance subscales (see Table 1), we decided to treat each subscale as a separate variable for the path analyses.

Benefit Use

Participants used a five-point scale with options ranging from Never (1) to Very frequently (5) to indicate how often they used the same 12 benefits referred to in the benefit importance questions. A promax-rotated principal components analysis of these items revealed three factors that paralleled the benefit importance variables. We named these factors alternative benefit use (20% variance, α = .68), traditional benefit use (12% variance, α = .44), and health benefit use (10% variance, α = .43). The lower internal consistencies for these scales reflect the fact that they are indicators of behavioral constructs. Thus, patterns of reported use for different benefits from the same conceptual domain may not be correlated (cf. Bollen & Lennox, 1991). As with the importance variables, we treated the benefit use variables as separate dimensions for the path analyses.

Table 1
Means, Standard Deviations, Reliabilities, and Correlations among Study Variables

Variable	*M*	SD	1	2	3	4	5	6	7	8	9	10	11	12
1. Benefit communication quality	5.47	.84	(.95)											
2. Benefit system quality	5.37	.83	.69	(.79)										
3. Employee participation	4.59	1.09	.37	.32	(.75)									
4. Health benefit importance	6.65	.82	.11	.11	.00	(.79)								
5. Traditional benefit importance	6.67	.61	.09	.09	.03	.46	(.74)							
6. Alternative benefit importance	4.02	1.16	.03	.01	.07	.19	.23	(.72)						
7. Health benefit use	3.63	.92	.13	.11	.01	.32	.06	.04	(.68)					
8. Traditional benefit use	3.80	.67	.12	.10	.00	.04	.26	.07	.27	(.44)				
9. Alternative benefit use	1.46	.48	.00	−.02	−.03	.11	.10	.39	.25	.29	(.43)			
10. Benefit knowledge[1]	15.96	2.42	.09	.09	.06	.08	.09	.08	.10	.14	.17	n/a[2]		
11. Affective commitment	5.24	.87	.24	.18	.29	.10	.10	.09	.10	.05	.07	−.04	(.82)	
12. Continuance commitment	4.68	1.11	.15	.12	.01	.08	.08	.01	.12	.04	-.09	−.01	.24	(.80)

[1]Raw number correct out of 21 questions.
[2]Alpha not computed.
N = 974; correlations greater than absolute value of .07 significant at $p < .05$.

Benefit Knowledge

Participants completed a 21-item multiple choice and true–false test assessing their knowledge of benefits terminology and procedures. The benefits department of the participating company developed the test, ensuring that the items had good face and content validity. The questions ranged from relatively easy (e.g., Which of the following benefits is not offered?) to quite challenging (e.g., the company provides, at no cost to you, basic life insurance that pays a benefit to your beneficiaries if you die equivalent to:). Scores on the knowledge test were significantly correlated with a self-report measure of perceived benefit knowledge ($r = .26$, $p < .01$) and scores on the *Wonderlic Personnel Test* (Wonderlic, 1992), a cognitive ability measure ($r = .21$, $p < .01$). These findings provide some additional validity evidence to support the inference that the test captures benefit knowledge. We used the proportion of questions answered correctly for the path analysis. These scores ranged from 29% to 95% with mean = 76% and SD = 12%.

Organizational Commitment

We measured affective (eight items, $\alpha = .82$) and continuance (eight items, $\alpha = .80$) commitment with slightly adapted versions of Meyer and Allen's (1984) organizational commitment scales. Participants used a 7-point agreement scale to rate these items; response options ranged from strongly disagree (1) to strongly agree (7).

Treatment of Missing Data

The participating organization employed a flexible cafeteria-style benefits plan, which allowed employees to choose among various benefits. For the benefit service quality and communication quality scales, participants were instructed only to answer questions about benefits they chose as a part of their personal coverage. Thus, each employee rated a different set of items. For example, 722 employees answered the medical benefit communication items, whereas only 121 responded to questions about legal services items. Missing data on these items is not likely to be at random, rendering traditional imputation procedures inappropriate for these scales. Since we were interested in employees' perceptions of the benefits they actually used, we calculated scale scores using items actually completed by the employee.

The remaining scales were applicable to all employees, since they either did not pertain to specific benefits (e.g., commitment, participation) or because employees were capable of answering the questions, regardless of whether they had selected the benefit as part of their coverage (knowledge, importance, use). For these scales, we deleted 61 participants because they did not answer at least 80% of the items on any

scale. For the remaining participants with missing data, we imputed missing values by regressing the item with missing values on other scale items with complete data, yielding a final sample of 974 cases with complete data.

Analysis

We conducted a series of path analyses using maximum likelihood estimation from *AMOS* 4.0 (Arbuckle, 1999) and the covariances among the variables. In addition to the conventional chi square test of significance, we examined three additional model fit indices: the root mean square error of approximation (*RMSEA*), standardized root mean square residual (*S-RMR*), and comparative fit index (*CFI*). We used Hu and Bentler's (1999) recommended criteria of .05 or below, .06 or below, and .95 and above for these three indices, respectively.

We conducted the actual path analyses in two stages. In the first stage, we compared our hypothesized partially mediated model to two plausible and more parsimonious alternative models. The first was a direct effects model including paths from the system features to benefit knowledge, benefit use, and commitment, but not paths from benefit knowledge and use to commitment. The second was a completely mediated model including paths from the system features to knowledge and use, but not paths from the system features to affective and continuance commitment. All analyses included paths reflecting relationships (a) between affective and continuance commitment, (b) among the three benefit importance variables, and (c) among the benefit system features of participation, system quality, and communication quality (these paths are not shown in the figures for economy of presentation). We tested all three models using manifest model analyses with total scale scores as single indicators.

In the second stage of the analyses, we investigated two sets of modifications to the best-fitting model. First, we evaluated the fit of the model after dropping all non-significant paths to improve the overall parsimony of the model. Then, we examined modification indices in search of substantively meaningful improvements to the best fitting model. We calculated chi square difference tests and parsimony adjusted *CFI*s (*P-CFI*) to evaluate each successive modification.

RESULTS

Table 1 presents the means, standard deviations, correlations, and reliability estimates for the study variables and Table 2 presents the fit indices for the path analyses. In the first stage of model testing, we

Table 2
Fit Indices for Structural Equation Models

	χ^2	df	*RMSEA*	*S-RMR*	*CFI*	*P-CFI*
Hypothesized and alternative models						
Direct effects model	96.06	23	.06	.04	.96	.34
Completely mediated model	198.34	27	.08	.06	.91	.37
Partially mediated model	55.69	15	.05	.03	.98	.22
Improvements to partially mediated model						
All non-significant paths dropped from partially mediated model [1]	78.90	38	.03	.03	.98	.56

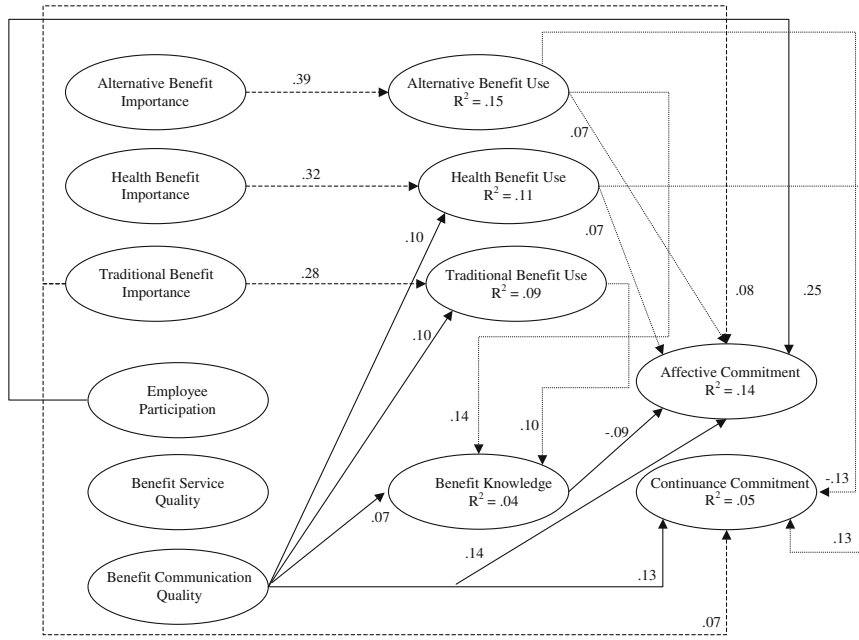
[1] $\Delta\chi^2 = 22.44$; $\Delta df = 23$, p = ns, for comparison with partially mediated model.
$N = 974$ for all analyses.

compared the direct effects, partially mediated, and completely mediated models with respect to overall model fit. Both the direct effects and partially mediated models met or exceeded all of our fit criteria whereas the completely mediated model did not meet any of our criteria. The partially mediated model outperformed the direct effects model on all of the indices except the *P-CFI*, and the chi square difference test indicated the partially mediated model outperformed the direct effects model in terms of overall model fit ($\Delta\chi^2 = 39.37$, $\Delta df = 8$, $p < .01$). Further, several parameter estimates corresponding to paths included in the partially mediated model but not included in the direct effects model were statistically significant, suggesting that the partially mediated model added meaningful information about the relationships among our variables. Therefore we retained the hypothesized partially mediated model for further analyses.

In the second stage of the analyses, we sought to improve the parsimony of the hypothesized model by dropping non-significant hypothesized paths. Ideally, this model would show strong overall model fit with increased parsimony, but not show significantly poorer overall model fit than the hypothesized model. We removed 23 non-significant paths from this model without showing a significant decline in overall model fit (in fact, the *RMSEA* improved from .05 to .03). Also, with respect to parsimony, this model fit better (*P-CFI* = .56) than either the hypothesized model (*P-CFI* = .22) or the direct effects model (*P-CFI* = .34). The modification indices revealed no other meaningful paths that could be freed to further improve this model.

Figure 2 shows the squared multiple correlation and standardized parameter estimates for the final model. The results showed mixed support for our hypotheses. Hypothesis 1 concerned the relationship between the four system features and benefit use. Not surprisingly, each benefit importance variable predicted the corresponding use variable in

Figure 2
Standardized Parameter Estimates and Squared Multiple Correlations for Final Model



the expected direction, showing that people are more likely to use benefits they value. In contrast to our expectations, neither employee participation nor benefit system quality predicted any of the benefit use variables. However, benefit communication quality was positively related to both health and traditional benefit use, showing that good quality communication systems appear to encourage employees to use these benefits.

Hypotheses 2a and 2b concerned antecedents of benefit knowledge. Three variables were significantly related to benefit knowledge. First, benefit communication quality was positively related to benefit knowledge, showing that people who report better benefit communications know more about their benefits program. Second, both traditional benefit use and alternative benefit use (but not health benefit use) were related to benefit knowledge, showing that people who use certain benefits are generally more knowledgeable about their benefits. There were no direct relationships between benefit knowledge and benefit importance. However, there were indirect effects of alternative and traditional benefit importance on knowledge through the importance–use relationships. Communication quality also had indirect effects on knowledge through

traditional benefit use. There were no relationships between knowledge and employee participation or benefit service quality.

Hypothesis 3a and 3b concerned the antecedents of affective commitment. Participants who reported higher levels of affective commitment also reported higher benefit communication quality, employee participation, and traditional benefit importance, as well as more frequent use of health and alternative benefits. Alternative and health benefit importance exerted indirect effects on affective commitment, through their relationships with their corresponding use variables. Finally, counter to our expectations, we obtained a negative relationship between benefit knowledge and affective commitment, such that people who obtained higher scores on the benefit knowledge test also reported lower levels of commitment.

Hypotheses 4a and 4b concerned the hypothesized antecedents of continuance commitment. There were four significant paths to continuance commitment. Employees who reported better quality benefit communication systems also reported higher levels of continuance commitment, indicating that greater perceived familiarity with the benefit system contributes to a sense of needing to remain with the organization. Similarly, employees who indicated higher levels of traditional benefit importance and those who used more health benefits also reported higher levels of continuance commitment. Interestingly, the relationship between alternative benefit use and continuance commitment was significant, but negative. People who use more alternative benefits were less likely to feel a strong need to remain with the organization. Finally, we found indirect negative effects of alternative benefit importance on continuance commitment, and indirect positive effects of health benefit importance on continuance commitment.

DISCUSSION

This paper explored the relationship between four benefit system features and benefit utilization, benefit knowledge, and organizational commitment. A series of path analyses supported a partially mediated model in which benefit system features had direct and indirect relationships with all three outcomes. Although the overall model fit the data quite well, we found mixed support for our specific hypotheses, with widely varied patterns of relationships between each system feature and the three outcomes. These findings provide a basis for further empirical research on benefit systems and suggest the practical value of efforts to improve some specific aspects of benefit systems.

Benefit System Features

Based on prior conceptual work by Miceli and Lane (1991), we hypothesized that people who believe their benefit system provides important benefits should use their benefits more frequently, be more knowledgeable about their benefits, and be more committed to the organization. Perhaps our least surprising finding was the support for the corresponding importance–use relationships, such that people who rated a particular type of benefit as important also used that benefit more frequently. However, these relationships were not particularly strong, suggesting that future research could investigate moderators of these relationships. For example, some people may value health benefits because they have an immediate personal need, whereas others may value health benefits because of anticipated future health concerns (e.g., children, aging). Employees who have an immediate personal need may be much more inclined to learn the details of their benefit coverage and the benefit importance–knowledge relationships would be expected to be stronger for these employees.

Traditional benefit importance was directly related to both forms of commitment. People who strongly valued pension, vacation, and sick leave benefits also reported stronger emotional attachments to the organization and thought the benefits of staying with the organization exceeded the potential costs of leaving. The analyses showed no support for the other hypothesized direct relationships between benefit importance and knowledge or commitment. However, the pattern of significant paths suggested additional indirect effects of benefit importance through benefit use. Providing valued benefits appears to enhance commitment, but, consistent with other studies (e.g., Sinclair et al., 1995), the findings vary across different benefits. Sinclair et al. (1995) suggested that most employees expect some benefits (e.g., health benefits) but not others (e.g., educational benefits) as a condition of employment. They suggested that receiving "unexpected" benefits should have a stronger effect on attitudes. It is unclear whether this finding generalizes to benefit system features, but future research might investigate some of these (and other) potential pathways through which benefit perceptions affect organizational commitment.

We did not find particularly strong or widespread effects for either employee participation or benefit service quality. Once other features of benefit systems are accounted for, benefit service quality may not be a particularly salient influence on employees' perceptions about their benefits. For example, the company used a flexible (cafeteria-style) benefit system. Flexibility of choices about benefits may be sufficient and other aspects of participation in benefit systems may not be necessary. On the other hand, a review by Cardy and Selvarajan (2001) raises the point that

there are many possible forms of participation in organizational systems. For benefits systems, participation could include expressing benefit service-related concerns to company personnel, advocacy for particular benefits, and even active participation in negotiation processes with benefit service providers. Employees probably differ dramatically in their desires for each of these forms of participation.

Some of the more robust findings were associated with benefit communication quality. Employees who felt the organization had more effective communication systems also reported more health and traditional benefit use, greater benefit knowledge, and stronger affective and continuance commitment. We find these data particularly interesting because they show how efforts to improve benefit communication systems may strengthen employee retention, even when other factors such as importance, use, and knowledge have been accounted. Thus, these findings point to specific changes to benefit systems that may promote retention.

Outcomes of Benefit Systems

We hypothesized that benefit utilization would help promote employee retention and benefit knowledge. In support of that contention, both alternative and health benefit use were associated with stronger affective commitment and both alternative and traditional use were associated with increased knowledge. However, other benefit use findings are a bit murky. For instance, employees who more frequently used alternative benefits reported lower levels of continuance commitment to the organization whereas employees who used more health benefits reported higher levels of continuance commitment. Further, because benefit knowledge was negatively associated with affective commitment, benefit use had some negative indirect effects on affective commitment. These findings may be connected to individual differences among employees that influence both patterns of use and organizational commitment, such as tenure or whether one has children. In any case, the results show that benefit utilization is related to other features of benefit systems as well as to employee attachment patterns. Finally, the differences across benefits types reinforce the point that both the antecedents and consequences of employees' benefit perceptions vary across benefit types.

Our findings help highlight two broad theoretical explanations for the effects of benefit systems on commitment. Continuance commitment involves a cost-benefit analysis of staying in the organization, such that people remain a member of the organization as long as the cost-benefit ratio of remaining is better than other available options. High quality benefit systems should contribute to this calculus. In contrast, affective commitment involves "deeper" symbolic effects of benefit systems. In

effect, the benefit system operates as a social exchange agent for the organization and helps employees develop a sense of the extent to which their employer values them and cares about their well-being. Benefit systems appear to influence both of these mechanisms. However, our model explained nearly three times as much variance in affective as continuance commitment, suggesting that benefit systems influence social exchange relationships more than employees' cost-benefit analyses about remaining with the organization.

We hypothesized that effective benefit systems would promote employees' benefit knowledge. Our research involved an objective assessment of benefit knowledge, which was related to employees' perceptions about communication quality and the extent to which employees used alternative and traditional (but not health) benefits. Four of the questions on the knowledge test concerned health benefits, so the lack of a relationship between health benefit use and benefit knowledge is not readily attributable to whether health benefits were represented on the test. However, the findings could reflect other issues related to the content of the test. For example, the items differed in difficulty by benefit type; items relating to some benefits may have been easier to answer than others. Another issue could be that infrequent users of benefits may not have responded to the survey, restricting variance on several of the scales and leading to underestimates of the relationships among our constructs of interest.

In applied research, benefit knowledge tests covering a broad array of benefits cannot include several detailed questions about individual benefits. Thus, comprehensive knowledge tests may be used at the expense of being able to make sophisticated statements about employees' knowledge of any particular benefit. We advise researchers to balance the complexity of the test with the complexity of the benefit system; detailed assessments may be needed for health or pension benefits but not for vacation or education benefits. Given the continuous changes to, and increasing complexity of, health benefit systems, one important research direction would be to focus on employees' knowledge about their health benefits.

Applied research also could make a valuable contribution to practice by clarifying which types of benefit communications effectively promote knowledge. Research could evaluate the efficacy of various knowledge-promoting interventions or help organizations develop refined measures of benefit knowledge. Benefits researchers also can help benefits personnel apply literature in other areas of psychology such as learning, organizational communication, and health promotion, to problems of benefit communication. This research needs to be sensitive to contextual issues. For example, employees probably are more motivated to learn about their benefits coverage following changes in vendors that require

employees to re-enroll, or in unionized settings, collective bargaining processes involving a potential cut to benefits coverage.

Limitations

One possible limitation of this study concerns the fact that the benefits measures were *ad hoc* scales designed to fit the needs of the sponsoring organization and the context of their specific benefit system. This raises the need to be cautious about the strength of the inferences drawn from the study and calls attention to the need to replicate and extend our findings. The pattern of correlations among the variables suggests reasonable levels of discriminant validity, with only two correlations (of 64) exceeding .40. Moreover, the factor analyses and reliability analyses generally supported the construct validity of our measures. Nevertheless, further psychometric refinements of our benefit system scales and further development of the nomological net for benefit attitudes are of clear practical and scholarly value.

The use of a self-report survey to gather data introduces the possibility that various biases influenced our findings (e.g., social desirability biases, common method effects). There are at least four reasons to be confident that these biases have minimal effects in our study. First, most of the constructs we assessed are perceptual in nature and quite appropriately measured by self-report. Second, the benefit use and knowledge items are more direct indicators of behavior, reducing the chances their correlates are attributable to percept–percept biases stimulated by the response process. Further, most of the perceptual constructs we assessed were cognitive in nature, suggesting the pattern of observed correlations cannot be explained by general affective states. Third, the correlation matrix shows no sign of positive manifold (i.e., large numbers of positive correlations), implying that a common method factor would not explain the observed patterns of covariation. Finally, past empirical research suggests that method variance accounts for small proportions of observed covariation among variables (Doty & Glick, 1998). Therefore, it seems unlikely that our findings completely reflect methodological artifacts.

The use of a cross-sectional design limits the strength of the causal inferences that can be drawn from the data. For example, benefit use and benefit knowledge could have reciprocal effects such that making greater use of ones' benefits should enhance knowledge even as greater knowledge facilitates use. It also is possible that benefit use and benefit importance are reciprocally related. We hypothesized that employees are more likely to use benefits that are personally important to them (i.e., that importance influences use). However, employees may not regard some benefits as important until they face a situation where they need them. For example, an employee might not regard work and family

benefits as important until she/he has childcare or eldercare needs to meet. Thus, benefit use also may influence benefit importance perceptions. Because of these possibilities, we attempted to be conservative in our use of causal language and we note that, like many other fields, benefits research would profit from greater use of research designs and analytic strategies that incorporate reciprocal causality.

Future Research

Past studies have shown that attitudinal and behavioral outcomes differ across types of benefit coverage provided by diverse samples of organizations. In contrast, we found evidence of differences across perceptions of benefit systems within one organization. Future research could integrate these approaches to further disentangle the effects of benefit system features, coverage, knowledge, utilization, and satisfaction. For example, health benefit choice and utilization depend on many individual and systemic factors including levels of coverage from other family members, whether employees receive cash reimbursements if health benefits are not chosen, and employees' anticipated future health needs. One increasingly important issue concerns the extent to which employees bear the costs of their benefit systems. Past research shows that employees' costs influence their attitudes toward benefits (cf. Dreher, et al., 1988; Williams, 1995) and contemporary trends suggest that employees bear larger proportions of benefit costs each year, particularly for health benefits (cf. Henry J. Kaiser Family Foundation, 2003). Such issues suggest the importance of investigating the employees' benefit attitudes and behavior. Studies using multiple organizations, with broad arrays of benefits systems and patterns of benefit coverage might reveal different effects across both the level and form of individual benefits.

During this study, we encountered several issues related to the structural complexity of flexible benefits systems that were not substantive concerns for our study, but that are important to mention as considerations for future research. First, we did not distinguish between aspects of the benefit system managed by the company and those controlled by third-party vendors (the system we studied contained a mix of these benefits). Benefits administered by third-party vendors may have less of an influence on organizational attitudes than benefits controlled by the primary organization. In the participating company, employee questions about benefits were directed to an internal Benefits Service Center staffed by the participating company. Thus, employees had limited, if any, direct interaction with outside venders. Under such circumstances, employees should perceive third-party vendors as social exchange agents of the organization rather than as separate actors.

Second, flexible benefits systems raise several data-management challenges. Each benefit was chosen by a different subset of the sample, leading to non-random missing data on certain benefit questions. We focused on three specific clusters of benefits for the importance and use variables and used global measures for the other measures of system features and knowledge. This approach emphasizes economy of presentation and parsimony of model development. However, there are at least four other viable approaches to evaluating flexible systems: (a) an *a priori* focus on the global benefit system using questions that refer to the system in general, (b) studying systems on a benefit-by-benefit basis (by including parallel questions for each benefit), (c) aggregating all benefit questions to derive global measures of benefit features, and (d) studying the subset of benefits chosen by most employees (e.g., health benefits). Each approach has strengths and weaknesses and choices among them should be guided by the substantive questions of interest.

CONCLUSION

Our research illustrates the critical importance of communication systems, employee participation, and benefit importance for effective system management. One goal of benefit systems management should be to help employees make good decisions about their benefits coverage. These choices largely depend on the information employees have available. Employees who feel they made inappropriate choices and attribute their negative outcomes to the organization's benefit system are likely to become dissatisfied not only with the benefits, but the organization itself. Regardless of whether an organization uses traditional or flexible benefits systems we strongly encourage practitioners to emphasize design employee-friendly systems, provide employees with opportunities to participate in system design, and clearly communicate benefit system information to members of the organization.

APPENDIX A: SURVEY ITEMS

Benefit Service Quality

1. Filing a medical claim with my health provider is easy.
2. My medical claims are processed in a timely manner.
3. Filing a flexible reimbursement account (health or dependent day care) is easy.

4. Using the Phone Benefit System (PBS) to check my 401(k) balance is easy and convenient.
5. Calling the company's Benefit Service Center (BSC) is a convenient way to get information about my benefits.
6. The phone representatives at the BSC are courteous and ready to help.
7. The information I receive from the BSC is accurate and helpful.
8. Filing a dental claim is easy.
9. My dental claims are processed in a timely manner.
10. Using the vision service plan to purchase a pair of glasses (or contacts) is easy.
11. My medical claims are processed accurately.
12. My dental claims are processed accurately.
13. Investment plan information I receive from the customer service representatives [at the financial planning vendor] and company PBS is accurate and helpful.
14. My mail-order prescriptions through [vendor] are filled accurately.
15. Legal information I receive [from the legal services provider] is accurate and helpful.
16. My vision claims are processed accurately by the vision service plan.
17. My flexible spending account claims (i.e. health or dependent day care) are processed accurately.

Employee Participation

1. The company's benefit program is planned without regard to employee needs and desires (reverse scored).
2. The company makes changes in its benefit package in response to environmental changes or employee needs and desires.
3. Employees have input over which benefits are included in their benefit program.
4. My needs and desires concerning benefits were taken into account in planning the company's benefit program.

Benefits and benefit system features used in the benefit importance, use, and communication quality scales (the scale formats are described in the measures section, specific benefits used for each scale are listed below).

Benefits Represented in all Three Scales

(1) Medical coverage, (2) Dental coverage, (3) Vision coverage, (4) Legal service coverage, (5) Employee assistance plan

Benefits Represented in Use and Importance Scales but not Communication Quality Scale

(1) Investment plan—401(k), (2) Vacation, (3) Sick leave, (4) Education assistance plan, (5) Personal unpaid leave of absence, (6) Mail-order prescription drugs, (7) Health care flexible reimbursement account*, (8) Dependent day care flexible reimbursement account*

*Both flexible reimbursement account benefits were assessed with one item in the benefit communication quality scale

Benefits Represented in Benefit Communication Quality Scale Only

(1) Benefits service center, (2) Phone benefit system, (3) Local human resources representative

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