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Measurement Invariance of the Job Satisfaction Survey Across Work Contexts

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The purpose of this study was to test for measurement invariance of the Job Satisfaction Survey (JSS) across law enforcement job contexts. Respondents included 1,198 patrol officers and 312 administrative officers. Fourteen of the 32 items displayed differential item functioning. Implications for using the JSS in organizational settings are discussed.

Job satisfaction surveys are commonly used by organizations to help manage, train, and retain valuable employees (Liu et al., 2004). Organizations use surveys to assess employees' job satisfaction for many purposes, including gauging work morale and diagnosing potential problems. Often, it is of interest to make comparisons across different types of jobs (i.e., job contexts). For instance, employers may compare the job satisfaction of workers under a new compensation or incentive policy to workers under an existing policy to assess employee reactions to the new policy. However, in order to meaningfully interpret the results of satisfaction surveys, researchers must be confident that their instrument displays measurement invariance (MI) across the individuals and groups being measured. If MI exists, researchers can be confident that (a) the measured construct generalizes across groups, (b) respondents from both groups similarly interpret the scale items, (c) the rating scales are similarly calibrated across groups, and (d) observed mean differences between groups represent actual differences in the level of the underlying trait or attitude (Drasgow, 1984). Establishing MI involves determining whether the relationship between the trait or attitude (e.g., job satisfaction) and observed scores differs across groups (Maurer et al., 1998). Conclusions regarding potential group differences based on survey instruments that fail to demonstrate MI are at best tenuous. In this study, we examined the MI of the Job Satisfaction Survey (Spector, 1997) across work contexts.

We have been unable to locate any studies that have investigated MI across different work contexts within a single organization. For the current study, work context is defined as the conditions or characteristics of work that can change the demands on the incumbent (Strong, Jeanneret, McPhail, Blakley, & D'Egidio, 1999). Strong et al. (1999) developed a taxonomy of work context, in which context consists of three components: interpersonal relationships, physical work conditions, and structural job characteristics. According to Strong et al. (1999), interpersonal relationships in work context involve aspects of communication, types of role relationships required, responsibility employees have for others, and interpersonal conflicts employees may have with others. Physical work conditions include aspects of the work setting (e.g., variety, privacy), environmental conditions, and physical job demands. Structural job characteristics consist of the criticality of employees' positions (e.g., impact of decisions), level of challenge, and the pace of work (Strong et al., 1999). This taxonomy of work context allows distinctions to be made between employees within organizations, such as managers, clerical personnel, and maintenance personnel.

Contextual differences on the job may alter workers' conceptualization of certain work attitudes, specifically job satisfaction (Gerhart, 1987; Schaubroeck, Judge, & Taylor, 1998). Job satisfaction is a multifaceted psychological construct, covering a multitude of contextual factors encountered in the workplace (Spector, 1997). For instance, a worker may be satisfied with his or her pay, promotion opportunities, and fringe benefits, and also be dissatisfied with environmental conditions, coworker behavior, and the supervisor. Given that work context has been shown to influence job satisfaction (Judge, Bono, & Locke, 2000; Mount & Muchinsky, 1978; Sekaran, 1989), it is possible that substantial differences in work context may also alter the ways workers conceptualize facets of job satisfaction. For example, workplace operating conditions may be much more salient to personnel on a manufacturing assembly line than to clerical or administrative employees. Also, workers who are supervised in person may conceptualize satisfaction with supervision differently than workers supervised indirectly. As a result, the same item or items on a

single job satisfaction questionnaire could mean different things to different groups of employees.

Differences in the conceptualization of job satisfaction facets across contextual factors may negatively impact researchers' and practitioners' ability to meaningfully compare employee satisfaction scores when the employees being compared work in different contexts. Organizations frequently use worker job satisfaction to diagnose problem areas and gauge intervention effectiveness (Spector, 1997). Therefore, the ability to measure job satisfaction consistently and accurately across a wide variety of work contexts is highly desirable. Despite the apparent need to make cross-contextual comparisons, we were unable to find any studies that have investigated the MI of work-attitude measures used for such comparisons. The current study sought to address this gap by directly comparing the measurement properties of Spector's (1997) Job Satisfaction Survey across two groups of workers in the same organization operating in different work contexts.

Method

Participants

Participants included 312 administrative officers and 1,198 patrol officers from various agencies within a statewide law enforcement department in the southeastern U.S. The sample was comprised of approximately 40% state, 39% city/local, and 21% county/sheriff officers. Male respondents represented 84% of the sample. The sample was composed of 85% Caucasian, 11% African-American, 2% Native American, and approximately 1% Hispanic respondents. All employees completed a paper-based survey instrument.

Instrument

The Job Satisfaction Survey (JSS; Spector, 1997) is a 36 item, nine-facet survey instrument designed to assess employee attitudes about aspects of their jobs. Each facet is assessed with four items (Spector, 1997) using a Likert-type rating scale format with six ordered response options ranging from "strongly disagree" to "strongly agree." Descriptions of the nine job satisfaction facets are presented in Table 1. Reverse coded items were recoded prior to analysis.

Participants' job context was obtained by responses to the item, "Which of the following best describes the kind of work you do?" Response options for this item were "administrative work" or "patrol officer work." Administrative officer positions are commonly viewed as "desk jobs," involving a single work setting in relatively close proximity to other workers, structured work schedules, few job hazards, and relatively minor consequences resulting from errors. Patrol officers spend the majority of time traversing a district or beat, which involves a variety of work settings in distant proximity to other workers, unstructured work schedules, a relatively high rate of exposure to job hazards, and potentially serious consequences resulting from on-the-job errors.

Analyses and Procedure

Survey packets were distributed to supervisors, who administered the surveys to subordinates. Participants returned the completed survey packets to their supervisors, who mailed all surveys back to the researchers. Of the 2,211 surveys distributed, 1,511 were returned, resulting in a response rate of 68.34%. Respondent data were separated into two groups, based on the work context of the individual (cf. Strong et al., 1999).

Because IRT assumes unidimensionality, each job satisfaction subscale was tested for unidimensionality with exploratory factor analysis (EFA) using principal axis factoring and promax oblique rotation. Inspection of the resulting scree plot revealed an eight-factor solution to be appropriate for each group. The eight-factor solution accounted for over 47% of the shared variance in the administrative group (see Table 2 for factor loadings) and over 45% of the shared variance in the patrol group (see Table 3). Importantly, the eight factors were interpretable as eight of the nine proposed facets of the JSS. Therefore, responses pertaining to the *Pay*, *Promotion*, *Supervision*, *Fringe Benefits*, *Operating Procedures*, *Coworkers*, *Nature of Work*, and *Communication* facets of job satisfaction were empirically supported by the EFA and used in the following DIF analyses. All four items pertaining to the *Contingent Rewards* subscale were dropped from further analyses.

IRT analyses. While both item response theory (IRT) and confirmatory factor analysis (CFA) may be used to assess measurement invariance (see Meade & Lautenschlager, 2004; Raju et al., 2002), the current study employed IRT to test for invariance. IRT models the relationship between observed survey response and the underlying level of the latent trait or attitude. The present study utilized Samejima's (1969) graded response model (GRM), which is appropriate for responses using Likert-type scales (Andrich, 1995; Maller, 2001; Sinar & Zickar, 2002; Zagorsek, Stough, & Jaklic, 2006).

When the relationship between the underlying trait(s) of interest and the observed survey

scores differs across two groups, the survey instrument is said to display differential item functioning (DIF). Specifically, DIF is examined by assessing whether an individual in one group has a different expected probability of choosing a certain response option, compared to an individual from another group of equal standing on the underlying attitude (i.e., satisfaction level). The current study used the IRTLRDIF program (Thissen, 2001), to estimate item parameters and to determine the extent to which those parameters differ across groups (i.e., assess DIF). The IRTLRDIF program first estimates a set of item parameters that optimally fit the responses for each group independently. Subsequently, a series of constrained models are estimated in which the parameters for a single item are constrained to be equal across groups. The decrement in model fit is evaluated using a chi-square based statistic and is referred to as a likelihood ratio test (LR test; Thissen, Steinberg, & Wainer, 1988). Note that items may differ due to either *a* or *b* parameters. Thus, when LR test is significant, DIF is said to exist and additional models are estimated to allow the determination of whether the DIF is due to *a* parameters, *b* parameters, or both. In the current study, two-stage linking was used (cf. Flowers et al., 1999; Raju et al., 1995). Two-stage linking involves removing items flagged as differentially functioning on the initial IRTLRDIF run from the list of anchor items for subsequent analyses.

Results

Results of the LR tests are summarized in Table 4 and item parameters for DIF items are presented in Table 5. Six out of the 8 JSS scales contained at least one item that displayed DIF between groups. Across all 6 scales, 14 out of 32 items (43.8%) were identified as DIF items. Results revealed all 4 items composing both the *Pay* and *Promotion* scales displayed significant levels of DIF across groups. Half of the items composing both the *Operating Conditions* and *Coworkers* scales displayed significant DIF as well. One of the 4 items on each of the *Supervision* and *Nature of Work* scale were identified as DIF items, while none of the *Fringe Benefits* and *Communication* items exhibited DIF.

Items can display *a* parameter DIF, *b* parameter DIF, or both (Embretson & Reise, 2000). Item discrimination (*a* parameter) DIF refers to a difference in an item's sensitivity to detect changes in the job satisfaction across groups whereas *b* parameters represent the level of job satisfaction at which participants have a .50 probability of responding in or above a specific response category (Embretson & Reise, 2000). Differential item functioning attributable to only *a* parameters was detected in 3 JSS items (see Table 5). DIF for *b* parameters alone was detected for 9 of the 32 items, while DIF attributable to both *a* and *b* parameters was detected in 2 JSS items (see Table 5).

Interestingly, *b* parameter DIF was detected for all 4 items on the *Pay* subscale, though clear trends did not emerge. For instance, *Pay* subscale Item 2, "[Pay] raises are too few and far between," displayed DIF such that *patrol* officers with moderate to high satisfaction were more likely to respond with a higher (reverse coded) response option than administrative officers with equal satisfaction levels (see Table 5). However, Item 3, "I feel unappreciated by the organization when I think about what they pay me," displayed DIF, such that *administrative* officers with moderate to high satisfaction were more likely to respond with a higher (reverse coded) response option than patrol officers with equal satisfaction levels (see Table 5). These results indicate pay satisfaction responses on the JSS from patrol and administrative officers do not follow consistent patterns across items. Such differences may be due in part to work context dynamics, including the availability and frequency of promotional opportunities, the level of competition, and consequences of making errors on the job.

Two items on the *Satisfaction With Promotion* subscale displayed DIF due solely to the item's *a* parameter. Item 2 specifically addressed the rate at which high performers are promoted (see Figure 1). Item 3 addressed the promotion rate within the organization compared to other organizations (see Table 5). This finding suggests, when compared to employees in administrative positions, patrol officers' overall *Satisfaction With Promotion* is more highly associated with promotion resulting from good performance and a high promotion rate relative to outside organizations. DIF for Item 1 was attributable to both *a* and *b* parameters, while DIF for Item 4 was attributable only to the *b* parameters. Overall, contextual factors, such as the impact of on-the-job decisions, the level of individual responsibility and accountability, and the level of challenge of the job (Strong et al., 1999), may help explain the DIF results within the *Satisfaction with Promotion* subscale. For instance, relative to administrative officers, patrol officers may perceive on-the-job decisions (e.g., use of lethal force, initiating a high-speed chase, etc.) to have a higher impact, which may increase the perceived importance of promotions resulting from high performance.

Only one item in the *Supervision* scale was significant. Item 3 ("My supervisor shows too little

interest in the feelings of subordinates") exhibited DIF due to the *a* parameter such that the item was more closely related to latent attitudes in the patrol group. These results indicate patrol officers' overall satisfaction with supervision, relative to administrative officers, was more closely associated with supervisors' consideration for subordinate's feelings. This finding suggests differences exist in the nature of supervisor-subordinate relationships between patrol officers and administrative officers, which may be due to job contextual factors. For example, patrol officers may perceive a higher level of personal responsibility for fellow officers' well-being, relative to administrative officers. This high level of interpersonal responsibility may be associated with patrol officers' heightened expectations regarding supervisors' consideration of subordinates' feelings on the job.

Item 3 of the *Satisfaction With Operating Conditions* subscale (i.e., "I have too much to do at work") displayed the greatest between-group response differences (see Figure 2). This item displayed greater discrimination within the administrative group. Thus, administrative officers' responses to this item were more closely associated with their overall satisfaction with operating conditions. Additionally, dissatisfied patrol officers were much more likely to agree with this item relative to dissatisfied administrative officers. (A difference in *b* parameters with a highly similar interpretation was found for Item 1). In short, the data suggest patrol officers are more likely to develop strong attitudes based on perceived high workload, which could be due in part to contextual factors related to the job. For instance, relative to administrative officers, the pace of work for patrol officers may be more variable and unpredictable, with frequent distractions and interruptions occurring at irregular intervals. Perceived workload may be affected by such conditions, which can influence one's satisfaction with on-the-job operating conditions.

One item on the *Nature of Work* scale exhibited DIF. Item 2 ("I like doing the things I do at work") exhibited DIF on the *b* parameter such that for most levels of satisfaction, respondents in the patrol group were more likely to indicate agreement than their administrative group counterparts. This finding may be due to contextual factors related to the job, such as the variety and challenge of job tasks. For instance, patrol officers, relative to administrative officers, may perceive their everyday job tasks to be more varied and challenging, which may be associated with greater job satisfaction. Also, job tasks performed by patrol officers in the field, in comparison to tasks performed by administrative officers, may be more closely related to job characteristics that initially attracted participants to a career in law enforcement.

DIF due to the *b* parameter was also apparent for Item 4 of the *Coworkers* subscale, which stated, "there is too much bickering and fighting at work" (see Figure 3). At low levels of satisfaction, patrol officers were more likely to agree with Item 4 compared to administrative officers. At high levels of satisfaction, administrative officers were more likely to disagree with this item compared to patrol officers. These results indicate patrol officers at all levels of satisfaction were less tolerant of conflict between coworkers compared to workers in administrative positions. Contextual differences across work environments may help to explain this finding, specifically the criticality of interpersonal relationships in the work context of patrol officers. Patrol officers frequently depend on one another for physical safety and other work outcomes (e.g., cooperative investigations). Thus, any interpersonal conflict between coworkers may be viewed as "too much" among patrol officers, due to potential issues of personal safety and the possibility of injury that could arise from such behavior.

Discussion

At present, there is a lack of empirical studies that have addressed MI issues concerning work-related attitudes across multiple work contexts. The purpose of the present study was to assess the MI of the JSS across workers employed in different work contexts. Item-level DIF was detected in 6 of 8 job satisfaction facets. Because the LR framework indicated a sizable number of DIF items (43.8% of all items), comparisons of mean scores on the JSS between workers employed in different contexts may be specious.

These findings support the notion that differences in contextual factors in the workplace are associated with differing conceptualizations of job satisfaction items on the JSS. Little theoretical or empirical attention has focused on MI issues related to different work contexts. The current findings have theoretical implications for the study of work-related attitudes. First, the JSS did not appear to be similarly calibrated across employees whose job contexts differed substantially. Therefore, researchers using the JSS should test for MI prior to making comparisons across employees working in largely different job contexts. Future research is warranted to ascertain why DIF might occur between work groups in different work contexts. Such research should utilize established taxonomies of work context (e.g., Strong et al., 1999) to guide the

classification of job contexts, as well as comparisons of workers' survey responses across contexts. Second, researchers should investigate the role of work context in the potential occurrence of DIF using instruments measuring other important work-related attitudes (e.g., organizational commitment, job involvement, etc.). Such research would enhance practitioners' understanding of the accuracy and comparability of psychological assessments conducted across work environments within organizations.

These findings have practical implications as well. The large number of DIF items found on the JSS in these analyses suggests the measurement properties of the scale may vary with respect to work context, thereby decreasing the interpretability of mean-comparisons across groups. As work contexts will likely differ somewhat within most large organizations, mean comparisons between employee groups across work contexts are valuable to organizational practitioners in assessing trends in personnel attitudes. Based on the current findings, these mean comparisons may lack interpretability as work context differences may be associated with different conceptualizations of the underlying constructs of interest. Further research is warranted to investigate the replicability and generalizability of the current findings to different industries and organizations.

Limitations

While sufficient to address the research goals of the current study, the strict focus on item-level DIF represents a limitation of these findings. Because organizations typically use scale- or test-level data to inform decision-making, item-level DIF may not significantly impact the accuracy and comparability of scale-level data. Moreover, the current study did not test for differential test functioning (Raju & Ellis, 2002), which may be highly relevant to organizational practice.

Another limitation of the current findings is the limited selection of work contexts included in the DIF analyses. With respect to Strong et al.'s (1999) work context taxonomy, job contexts in some organizations may not vary to the extent the two contexts considered in this study differed. Thus with the goal of enhancing the generalizability and practical utility, future research regarding DIF across work contexts should consider a variety of contexts that differ from one another to varying degrees.

Finally, the relatively small sample size of the administrative group represents an additional limitation to the current findings. As a result of this somewhat small sample size, the extreme response options (i.e., "strongly agree," "strongly disagree") of some items were infrequently endorsed. Low response frequencies of response options can bias item parameters and result in items that appear to display DIF. Further analyses are warranted to assess whether collapsing response categories for these items decreases the potential detection of DIF.

Conclusion

In conclusion, it is imperative to establish MI when using psychological instruments to inform organizational decisions stemming from group comparisons. Instruments that fail to display MI suggest the relationship between the underlying trait(s) of interest and the observed survey scores differs across groups of respondents. This difference may be attributable to differences in respondents' conceptualization of the underlying construct of interest, comprehension of the survey items, or both. In the current study, many of the JSS items displayed DIF across two groups of workers employed in largely different work contexts. Thus, researchers and practitioners using the JSS to assess and compare employees across work contexts should regard comparisons of group means as tenuous until empirical support for MI across respondent groups is established.

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Table 1.

Job Satisfaction Survey

Scale	**Description**
Pay	Pay and remuneration
Promotion	Promotion opportunities
Supervision	Immediate supervisor
Fringe Benefits	Monetary and non-monetary fringe benefits
Contingent Rewards	Appreciation, recognition, and rewards for good work
Operating Procedures	Operating policies and procedures
Coworkers	People you work with
Nature of Work	Job tasks themselves
Communication	Communication within the organization

Note. Adapted from Spector (1997).

Table 2

EFA Factor Loadings for Administrative Group (N = 312)

Scale items	I	II	III	IV
I *Pay*				
1 I feel I am being paid a fair amount for the work I do.	0.69			
2 Raises are too few and far between.	0.55			
3 I feel unappreciated by the organization when I think about what they pay me.	0.72			
4 I feel satisfied with my chances for salary increases.	0.62	0.35		
II *Promotion*				
1 There is really too little chance for promotion on my job.		0.62		
2 Those who do well on the job stand a fair chance of being promoted.		0.61		
3 People get ahead as fast here as they do in other places.		0.56		
4 I am satisfied with my chances for promotion.		0.89		
III *Supervision*				
1 My supervisor is quite competent in doing his/her job.			0.76	
2 My supervisor is unfair to me.			0.69	
3 My supervisor shows too little interest in the feelings of subordinates.			0.71	
4 I like my supervisor.			0.79	
IV *Fringe Benefits*				
1 I am not satisfied with the benefits I receive.				0.49
2 The benefits we receive are as good as most other organizations offer.				0.73
3 The benefit package we have is equitable.		0.37		0.83
4 There are benefits we do not have which we should have.				0.46
V *Operating Conditions*				
1 Many of our rules and procedures make doing a good job difficult.				
2 My efforts to do a good job are seldom blocked by red tape.				
3 I have too much to do at work.				
4 I have too much paperwork.				
VI *Coworkers*				
1 I like the people I work with.				
2 I find I have to work harder at my job because of the incompetence of people I work with.				
3 I enjoy my coworkers.				
4 There is too much bickering and fighting at work.				
VII *Nature of Work*				
1 I sometimes feel my job is meaningless.			0.36	
2 I like doing the things I do at work.				
3 I feel a sense of pride in doing my job.				
4 My job is enjoyable.				
VIII *Communication*				
1 Communications seem good within this organization.				
2 The goals of this organization are not clear to me.				
3 I often feel that I do not know what is going on with the organization.				
4 Work assignments are not fully explained.				

Note. Only factor loadings greater than .35 are shown.

Table 2 (continued)

EFA Factor Loadings for Administrative Group (N = 312)

Scale items	V	VI	VII	VIII
I *Pay*				
1 I feel I am being paid a fair amount for the work I do.				
2 Raises are too few and far between.				
3 I feel unappreciated by the organization when I think about what they pay me.				
4 I feel satisfied with my chances for salary increases.				
II *Promotion*				
1 There is really too little chance for promotion on my job.				
2 Those who do well on the job stand a fair chance of being promoted.				
3 People get ahead as fast here as they do in other places.				
4 I am satisfied with my chances for promotion.				
III *Supervision*				
1 My supervisor is quite competent in doing his/her job.				
2 My supervisor is unfair to me.				
3 My supervisor shows too little interest in the feelings of subordinates.				
4 I like my supervisor.				
IV *Fringe Benefits*				
1 I am not satisfied with the benefits I receive.				
2 The benefits we receive are as good as most other organizations offer.				
3 The benefit package we have is equitable.				
4 There are benefits we do not have which we should have.				
V *Operating Conditions*				
1 Many of our rules and procedures make doing a good job difficult.	0.37			
2 My efforts to do a good job are seldom blocked by red tape.	0.40			
3 I have too much to do at work.	0.68		0.35	
4 I have too much paperwork.	0.84			
VI *Coworkers*				
1 I like the people I work with.		0.80		
2 I find I have to work harder at my job because of the incompetence of people I work with.		0.42		
3 I enjoy my coworkers.		0.79		
4 There is too much bickering and fighting at work.		0.37		
VII *Nature of Work*				
1 I sometimes feel my job is meaningless.			0.43	
2 I like doing the things I do at work.			0.63	
3 I feel a sense of pride in doing my job.			0.65	
4 My job is enjoyable.			0.78	
VIII *Communication*				
1 Communications seem good within this organization.				0.63
2 The goals of this organization are not clear to me.				0.70
3 I often feel that I do not know what is going on with the organization.				0.62
4 Work assignments are not fully explained.	0.39			0.58

Note. Only factor loadings greater than .35 are shown.

Table 3

EFA Factor Loadings for Patrol Group (N = 1,198)

Scale items	I	II	III	IV
I *Pay*				
1 I feel I am being paid a fair amount for the work I do.	0.68			
2 Raises are too few and far between.	0.54			
3 I feel unappreciated by the organization when I think about what they pay me.	0.74			
4 I feel satisfied with my chances for salary increases.	0.65	0.36		
II *Promotion*				
1 There is really too little chance for promotion on my job.		0.59		
2 Those who do well on the job stand a fair chance of being promoted.		0.61		
3 People get ahead as fast here as they do in other places.		0.58		
4 I am satisfied with my chances for promotion.	0.35	0.89		
III *Supervision*				
1 My supervisor is quite competent in doing his/her job.			0.75	
2 My supervisor is unfair to me.			0.69	
3 My supervisor shows too little interest in the feelings of subordinates.			0.73	
4 I like my supervisor.			0.76	
IV *Fringe Benefits*				
1 I am not satisfied with the benefits I receive.				0.51
2 The benefits we receive are as good as most other organizations offer.				0.72
3 The benefit package we have is equitable.		0.36		0.79
4 There are benefits we do not have which we should have.				0.47
V *Operating Conditions*				
1 Many of our rules and procedures make doing a good job difficult.				
2 My efforts to do a good job are seldom blocked by red tape.				
3 I have too much to do at work.				
4 I have too much paperwork.				
VI *Coworkers*				
1 I like the people I work with.				
2 I find I have to work harder at my job because of the incompetence of people I work with.				
3 I enjoy my coworkers.				
4 There is too much bickering and fighting at work.				
VII *Nature of Work*				
1 I sometimes feel my job is meaningless.				
2 I like doing the things I do at work.				
3 I feel a sense of pride in doing my job.				
4 My job is enjoyable.				
VIII *Communication*				
1 Communications seem good within this organization.				
2 The goals of this organization are not clear to me.				
3 I often feel that I do not know what is going on with the organization.				
4 Work assignments are not fully explained.				

Note. Only factor loadings greater than .35 are shown.

Table 3 (continued)

EFA Factor Loadings for Patrol Group (N = 1,198)

Scale items	V	VI	VII	VIII
I *Pay*				
1 I feel I am being paid a fair amount for the work I do.				
2 Raises are too few and far between.				
3 I feel unappreciated by the organization when I think about what they pay me.				
4 I feel satisfied with my chances for salary increases.				
II *Promotion*				
1 There is really too little chance for promotion on my job.				
2 Those who do well on the job stand a fair chance of being promoted.				
3 People get ahead as fast here as they do in other places.				
4 I am satisfied with my chances for promotion.				
III *Supervision*				
1 My supervisor is quite competent in doing his/her job.				
2 My supervisor is unfair to me.				
3 My supervisor shows too little interest in the feelings of subordinates.				
4 I like my supervisor.				
IV *Fringe Benefits*				
1 I am not satisfied with the benefits I receive.				
2 The benefits we receive are as good as most other organizations offer.				
3 The benefit package we have is equitable.				
4 There are benefits we do not have which we should have.				
V *Operating Conditions*				
1 Many of our rules and procedures make doing a good job difficult.	0.36			
2 My efforts to do a good job are seldom blocked by red tape.	0.36			
3 I have too much to do at work.	0.66		0.35	
4 I have too much paperwork.	0.83			
VI *Coworkers*				
1 I like the people I work with.		0.79		
2 I find I have to work harder at my job because of the incompetence of people I work with.		0.40		
3 I enjoy my coworkers.		0.78		
4 There is too much bickering and fighting at work.		0.35		
VII *Nature of Work*				
1 I sometimes feel my job is meaningless.			0.43	
2 I like doing the things I do at work.			0.59	
3 I feel a sense of pride in doing my job.			0.64	
4 My job is enjoyable.			0.77	
VIII *Communication*				
1 Communications seem good within this organization.				0.63
2 The goals of this organization are not clear to me.				0.66
3 I often feel that I do not know what is going on with the organization.				0.66
4 Work assignments are not fully explained.				0.50

Note. Only factor loadings greater than .35 are shown.

Table 4.

Differential Item Functioning (DIF) Results

Subscale	*No. of DIF Items*
Pay	4
Promotion	4
Supervision	1
Fringe Benefits	0
Operating Conditions	2
Coworkers	2
Nature of Work	1
Communication	0

Note. Each subscale consisted of four items.

Table 5

Parameters of Items on the Job Satisfaction Scale That Displayed Differential Item Functioning

Item	*Scale*		*Employee Group*											
	Pay		Administrative Officers						Patrol Officers					
	a DIF	*b* DIF	*a*	*b1*	*b2*	*b3*	*b4*	*b5*	*a*	*b1*	*b2*	*b3*	*b4*	*b5*
1	No	Yes*	2.00071	-0.73718	-0.11707	0.44218	0.8967	2.07733	1.8202	-0.38264	0.30527	0.84019	1.48029	2.60914
2	No	Yes*	1.34316	-0.07268	0.96358	1.47146	2.1705	2.87636	1.69516	-0.20339	0.57313	1.31104	1.94641	2.50979
3	No	Yes*	2.17985	-1.28846	-0.44403	0.25308	0.64845	1.44038	2.09272	-1.08629	-0.33551	0.48822	1.13983	1.9225
4	No	Yes*	1.81607	-0.84155	-0.04805	0.63017	1.30069	2.60126	1.83334	-0.84616	-0.17703	0.53981	1.39394	2.37171
	Promotion													
	a DIF	*b* DIF	*a*	*b1*	*b2*	*b3*	*b4*	*b5*	*a*	*b1*	*b2*	*b3*	*b4*	*b5*
1	Yes*	Yes*	1.19349	-1.48548	-0.45952	0.36757	1.16215	2.33935	1.66268	-1.49363	-0.73673	0.05532	0.93003	1.91844
2	Yes*	No	1.4164	-1.64936	-0.69781	-0.11392	0.86565	2.19126	1.64375	-1.21752	-0.46449	0.09511	1.04991	2.3549
3	Yes*	No	1.27698	-1.34669	-0.29877	0.58797	1.58277	2.86852	1.53463	-1.23295	-0.35293	0.61975	1.72354	2.96836
4	No	Yes*	3.16281	-0.87597	-0.27755	0.1967	0.71975	1.38297	3.54646	-0.90733	-0.4071	0.17935	0.99004	1.75197
	Supervision													
	a DIF	*b* DIF	*a*	*b1*	*b2*	*b3*	*b4*	*b5*	*a*	*b1*	*b2*	*b3*	*b4*	*b5*
3	Yes*	No	1.85108	-2.09131	-1.5935	-0.95179	-0.36283	0.47742	2.46451	-1.89218	-1.38148	-0.7711	-0.21089	0.61642
	Operating Conditions													
	a DIF	*b* DIF	*a*	*b1*	*b2*	*b3*	*b4*	*b5*	*a*	*b1*	*b2*	*b3*	*b4*	*b5*
1	No	Yes*	0.72431	-2.59422	-1.11406	0.21428	1.51049	3.08154	0.84835	-1.61649	-0.38159	1.00754	2.08521	3.6438
3	Yes*	Yes*	2.50918	-0.97667	-0.23928	0.54	1.30385	2.12811	1.69445	-1.68204	-0.93281	0.14657	1.20526	2.23426
	Nature of Work													
	a DIF	*b* DIF	*a*	*b1*	*b2*	*b3*	*b4*	*b5*	*a*	*b1*	*b2*	*b3*	*b4*	*b5*
2	No	Yes*	1.85714	-3.03582	-2.15436	-1.81998	-0.94367	0.16029	1.8933	-3.18621	-2.84919	-2.29187	-1.20583	0.33458
	Coworkers													
	a DIF	*b* DIF	*a*	*b1*	*b2*	*b3*	*b4*	*b5*	*a*	*b1*	*b2*	*b3*	*b4*	*b5*
2	No	Yes*	0.89323	-3.56714	-2.17183	-0.87271	0.00408	1.5227	0.974	-3.7023	-2.41751	-1.05277	-0.12316	1.17355
4	No	Yes*	0.96462	-2.27273	-1.39271	-0.2299	0.52932	1.72863	0.77014	-3.35586	-2.14116	-0.58464	0.50817	2.28431

Note. *$p < .05$.

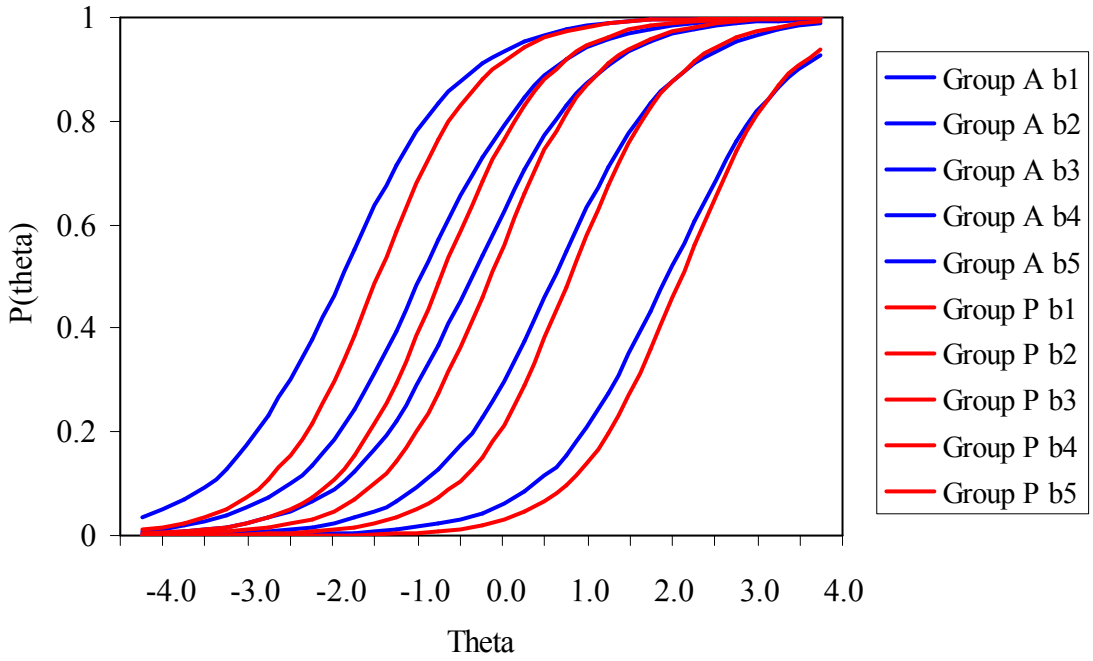
Figure Captions

Figure 1. Promotion Scale: Item 2 DIF

Figure 2. Operating Conditions Scale: Item 3 DIF

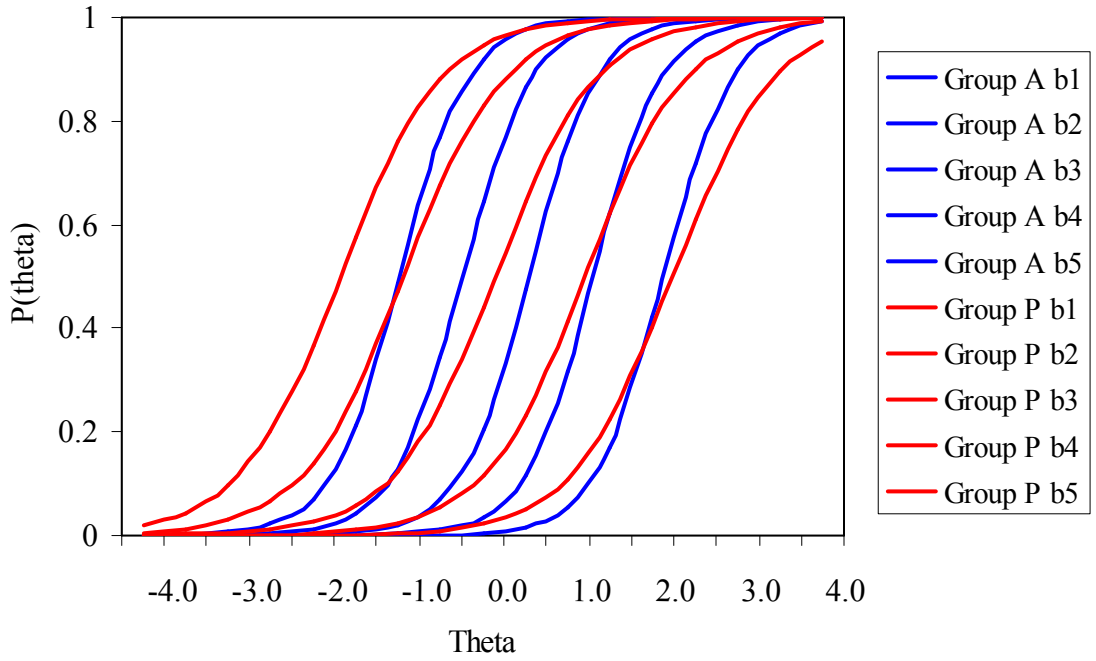
Figure 3. Coworkers Scale: Item 4 DIF

Promotion Scale Item 2: Those who do well on the job stand a fair chance of being promoted.



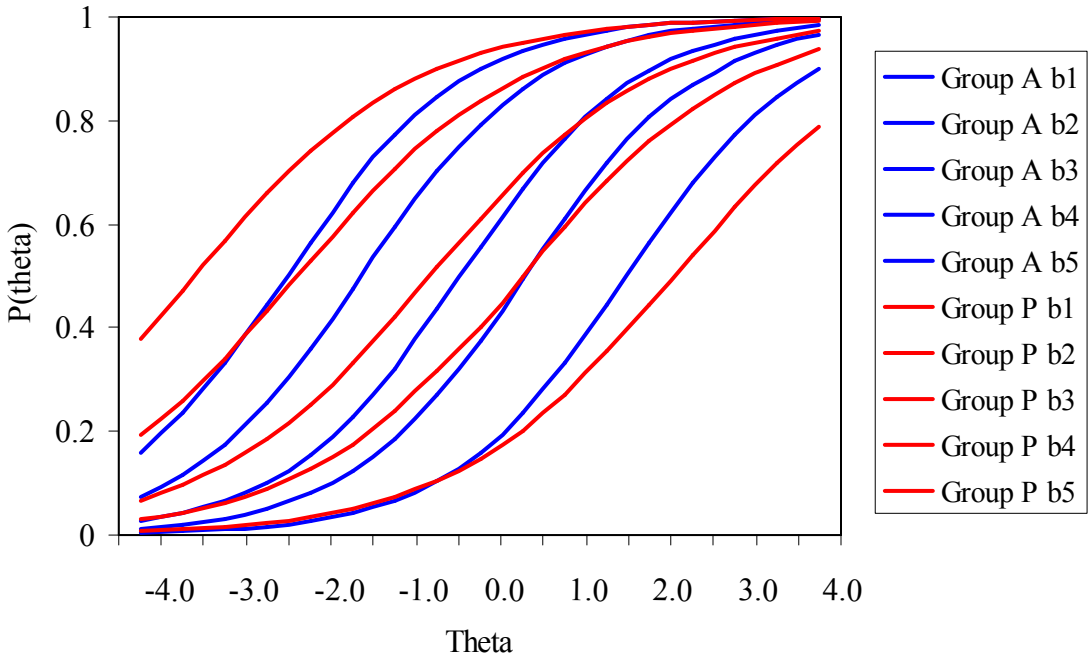
Note. Group A refers to administrative officers. Group P refers to patrol officers.

Operating Conditions Scale Item 3: I have too much to do at work.



Note. Group A refers to administrative officers. Group P refers to patrol officers.

Coworkers Scale Item 4: There is too much bickering and fighting at work.



Note. Group A refers to administrative officers. Group P refers to patrol officers.