

Revising the DEOCS: Preliminary Findings And Recommendations for Future Research

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Abstract

The DEOMI Organizational Climate Survey (DEOCS) was developed to assess facets of organizational climate that are relevant to unit-level performance. Commanders are increasingly relying on data provided by the DEOCS because of its utility as an indicator of command climate. Similarly, researchers and support staff are increasingly seeing the utility of the DEOCS for answering operationally-relevant research questions. Given the growing use of the DEOCS to guide policy, as well as, recent advances in survey methodology (e.g., multidimensional item response theory), the authors propose a five-phase research program to empirically drive revision of the DEOCS. To illustrate the potential utility of implementing the research program, the authors assessed DEOCS scales using item response theory and two samples (Sample 1 N = 26,078; Sample 2 N = 21,719) from the FY 2009 DEOCS data set. The authors provide replicated results for all scales in an appendix but briefly report the results for one scale, namely race/ethnic climate discrimination, which is comprised of items of the existing DEOCS racist behavior and differential command behaviors scales.

Revising the DEOCS: Preliminary Findings and Recommendations for Future Research

In line with previous work on organizational climate (e.g., Dickson, Resick, & Hanges, 2006; James & Jones, 1974; Mayer, Ehrhart, & Schneider, 2009; Schneider & Reichers, 1983), the DEOMI Organizational Climate Survey (DEOCS) was developed to assess facets of organizational climate that are relevant to unit-level performance. The DEOCS is generally administered annually at the request of a military unit commander and evolved from the Military Equal Opportunity Climate Survey (MEOCS; Dansby & Landis, 1991). Based on the MEOCS and DEOCS, a considerable amount of literature on military equal opportunity climate (EO climate; Dansby & Landis, 1991) emerged.

As noted by Walsh, Mathews, Tuller, Parks, and McDonald (2010, p. 198), “Previous psychometric work conducted on the DEOCS and the MEOCS provide support for the internal consistency and factor structure of the DEOCS scales (Estrada et al., 2007; Landis, Fisher, & Dansby, 1988; Truhon, 2003).” However, advances in theory, increasing demand for command applications of the DEOCS results, and advances in methods created an opportunity to revise the DEOCS, the implementation of which is scheduled in 2011.

In recent years, Item Response Theory (IRT) was applied by scholars to aid in survey construction and revision. IRT is based on a theory of measurement of latent traits, often called θ . The estimation of this trait is based not only on individual responses but also on the type of items that are administered (Embretson & Reise, 2000). With the present study, we aimed to apply IRT to assess the existing scales of the DEOCS as an initial step toward revising the DEOCS. In this paper, we describe our preliminary findings and propose a five-phase research program with which to revise the DEOCS.

Equal Opportunity Climate

Research on EO climate was conducted, in large part, within military organizations (e.g., Dansby & Landis, 1998; Estrada, Stetz, & Harbke, 2007; Knouse & Dansby, 1999; Rosenfeld, Thomas, Edwards, Thomas, & Thomas, 1991). However, this construct was also addressed outside of the military context by several researchers (e.g., Hooper, Miller, Topping, & Wells-Parker, 1989; Miller, Majors, Giesen, & Topping, 1990).

Even though EO climate has some conceptual overlap with what is typically referred to as diversity climate, these two types of climate are distinct. Diversity climate is typically assessed in terms of individuals' evaluations of and methods for dealing with workplace diversity (Knippenberg & Schippers, 2007), whereas, EO climate focuses more specifically on perceptions of the opportunities and potential favoritism afforded to certain groups of employees (Dansby & Landis, 1991). EO climate reflects (Dansby & Landis, 1991, p. 392):

The expectation by individuals that opportunities, responsibilities, and rewards will be accorded on the basis of a person's abilities, efforts and contributions, and not on race, color, sex, religion, or national origin. It is to be emphasized that this definition involves the individual's perceptions and may or may not be based on the actual witnessing of behaviors.

Military interest in equal opportunity initiatives was spurred by both the Civil Rights movement and the realization that diversity was an operational reality in the armed forces (Estrada et al., 2007). The equal opportunity and diversity initiatives enacted within the Department of Defense eventually led to stable research programs aimed at assessing EO climate in military organizations (e.g., Dansby & Landis, 1998; Knouse & Dansby, 1999; Rosenfeld et al., 1991). Through these research programs, aspects of EO climate were linked to a variety of

outcome variables. For example, a study by McIntyre, Bartle, Landis, and Dansby (2002) indicated that work group EO fairness perceptions were related to outcome variables, such as organizational commitment, job satisfaction, and perceived work group efficacy in active duty military personnel. More recently, Estrada et al. (2007) reported significant relationships between EO climate perceptions and the outcome variables of organizational commitment, job satisfaction, and perceived work group effectiveness in a study of reserve personnel. This finding was replicated by Firestone (2007) using a slightly different EO climate survey.

Whereas, several outcome variables were associated with EO climate perceptions, the theoretical underpinnings of these relationships are rooted in perceptions of organizational justice. Perceptions of equal opportunity, especially, as they were measured in military contexts, incorporate elements of distributive (i.e., fairness in the allocation of rewards and promotional opportunities), procedural (i.e., fairness of procedures used in processing complaints or requests from members of different groups), and interactional (i.e., biases in superior interactions with one or more groups) justice. Outcome variables, such as organizational commitment and job satisfaction, were linked to justice perceptions (Colquitt, Conlon, Wesson, Porter, & Ng, 2001). In a more explicit linkage between the two constructs and the outcome variables of job satisfaction and organizational commitment, Foley, Hang-Yu, and Wong (2005) noted that justice perceptions were strongly related to perceptions of discrimination and both variables predicted satisfaction and commitment.

In sum, research on EO climate and its outcomes based on the MEOCS and DEOCS yielded important and unique contributions to both the literature and best practices in command leadership. Unfortunately, anecdotal evidence suggests that research was hampered by inconsistent findings in attempts to replicate the factor structure of the DEOCS across units,

services, and time. Given the emerging importance of the literature, the growing use of the DEOCS by commanders in the field, and advances in methods, we call for a research program to empirically drive revision of the DEOCS and argue that an important step in revising the DEOCS is to apply IRT to evaluate the existing DEOCS scales.

Item Response Theory

In this section, we offer a brief overview of IRT. Unlike Classical Test Theory which looks at a scale as a whole, IRT determines parameters for each item. Graphically, the relationship between an underlying trait, θ , and the probability of endorsing an item is represented with nonlinear regression lines that are referred to as item characteristic curves or trace lines (Fraley, Waller, & Brennan, 2000).

There are two important parameters to note when analyzing items in IRT and reviewing the trace lines: the a and b parameters. The a parameter is the item discrimination parameter. This represents an item's ability to discriminate between individuals, and it is also directly related to an item's relationship with the overall latent trait (Embretson & Reise, 2000). In a technical sense, the a parameter can range anywhere from 0 to positive infinity. However, the a parameter generally ranges from 0.50 to 2.50, as a value below 0.50 is a poor indicator of the latent trait and a value higher than 2.50 is usually, but not always, due to measurement problems (Gray-Little, Williams, & Hancock, 1997).

B parameters are often called the item difficulty parameters. These parameters identify the threshold for where a person who is at a particular trait level will have 50% of endorsing the item (Fraley et al., 2000). Because a b parameter is representative of a particular trait level, its range is the same as the range for the trait, which technically is from negative infinity to positive infinity. However, θ is often represented in terms of standard deviations; thus, most values fall

within the range of -3 and 3. To have the most information about all levels of a particular trait, it is beneficial to have a large range of b parameters, unless the research interest is only on high or low levels of a particular trait. For example, researchers interested in a latent trait of psychopathy might only be interested in high levels of psychopathy and therefore would want the majority of the information to be concentrated at the top.

It is also important to note that IRT represents a family of models, as it can model data with several types of answer choices (Fraley et al., 2000). Two commonly used response choices are dichotomous (e.g. “true-false”) and polytomous (e.g., “strongly disagree-strongly agree”). Most important to advancing the DEOCS, software to assess multidimensional IRT has very recently become available.

When answer choices are dichotomous, there is a single trace line with one a and b parameter, respectively. However, when responses to each item are distinguished by different categories, than Samjima’s (1969) graded-response model is most appropriate. In this model, there is still one a parameter, but there are $k-1$ trace lines and b parameters (where k is the number of categories). Thus, within each item, each trace line can be thought of as a 2PLM with its own threshold parameter (Embretson & Reise, 2000).

The interpretation of the b parameters is similar to the way in which it was described before, but is slightly altered because of the multiple categories. It represents the amount of trait an individual must possess in order to respond above the particular category (Embretson & Reise, 2000). For example, $b_4 = 1.06$ denotes that an individual with $\theta = 1.06$ has a 50% chance of endorsing five or higher on this item (i.e., if there are only five answer choices, then this would just be the probability of endorsing this item with a five).

The Present Study

To assess the DEOCS, factor analyses needs to be conducted across multiple units and years in order to identify a replicated factor structure. Then, IRT would be applied to assess the scales on multiple samples within the entire DEOCS dataset, along with classical test theory applications (i.e., α). With the present study, we conducted a preliminary application of IRT to illustrate the approach. We conducted factor analyses on several samples and developed a new scale, race/ethnic climate discrimination, which is comprised of items of the existing racist behavior and differential command behaviors scales. We present and discuss in this paper the results of the applying IRT to this new scale. We also present in Appendix B the results of applying IRT to the other scales. We present in the Discussion section recommendations for a research program to revise the DEOCS.

Method

We refer the reader to Walsh et al. (2010) for a detailed presentation of the DEOCS and the methodologies used for data collection. For the present study, we used a sample of 26,078 respondents from the FY 2009 DEOCS data set. Because demographic data are not pertinent to the present study, we do not report them here. The results of the IRT analyses on the scales other than the race/ethnic climate discrimination scale presented in Appendix B are based on the same sample of 26,078 respondents, with the exception that the replication results reported reflected data from a different subsample ($N = 21,719$) of the FY 2009 DEOCS data set.

Results

For the race/ethnic climate discrimination scale, we first started with the 11 items listed in Appendix A. Our first step was to run IRT analysis using IRTPRO with Samejima's Graded Response Model (1969). The RMSEA was .12. We report the item parameters for the 11 items in Table 1. The following items appeared to show low discrimination ability compared to the other items and were subsequently removed from the analysis: (1) Item 2 ("Supervisors of different racial or ethnic backgrounds were seen having lunch together"), (2) Item 3 ("Personnel of different racial or ethnic backgrounds were seen having lunch together"), (3) Item 8 ("Members from different racial or ethnic groups were seen socializing together"), and Item 9 ("Members joined friends of a different racial or ethnic group at the same table in the cafeteria or designated eating area").

With these items removed, the RMSEA decreased to .09, which indicates better fit for this model. The item parameters for the new scale are shown in Table 2. To examine the dimensionality of this scale, we present local dependence parameters in Table 3. Numbers that appear in italicized font represent interrelationships not accounted for completely by the model (i.e., local dependence), while items in bold font show items that lack local dependence. There appears to be a concentration of local dependence in items 4, 5, 6, and 7. This is likely due to the similarity in referent in these items; all items ask about the actions of someone in charge. The last two items are also conceptually similar, in that they are both asking about the preponderance of ethnic epithets. However, it appears that all of these items contribute to the higher order factor of ethnic/racial discrimination climate, as there is a drastic reduction in fit when any one item is removed. The means, standard deviations, and inter-item correlations are presented in Table 4.

For this modified scale, the a parameters or slopes range from 1.73 to 4.03. This represents a strong association between the items and the latent factor of race/ethnic discrimination climate.

The b parameters largely span in the range of -2 to 3. The exceptions are for items 1, 11, and 12, where it appears that endorsing “strongly disagree” is less frequent. We present as examples the trace lines and information curves of items 1 and 4 in the modified ethnic/discrimination climate scale in Figures 1 and 2, respectively. As a means of comparison, we present in Figure 3 as an example of the trace lines and information curves of the items removed from this scale the characteristics of item 2. We present the total information curve in Figure 4. Based on this figure, it appears that most information is obtained at low levels of this scale (i.e., when there is a climate for ethnic/racial discrimination). As shown by the test characteristic curve, which we present in Figure 5, the summed score represents a good approximation of the IRT scaled score, as the increases are in a linear fashion.

Discussion

With the present study, we applied IRT methodology to assess the scale, race/ethnic climate discrimination scale, which is comprised of items of the existing DEOCS racist behavior and differential command behaviors scales. Our brief presentation of the results of the study and also of our application of IRT methods to assess the other DEOCS scales (Appendix B) suggest that some revision of the scales would be appropriate and, generally, that there would be utility in applying IRT to better understand existing DEOCS data. Accordingly, and in light of the growing importance of the DEOCS because of increased demands for leveraging it for both research and command purposes, we call for a research program to coincide with strategic efforts to revise the DEOCS. In doing so, we propose a five-phase research program below.

Phase One

Our application of IRT as presented in the present study was cursory and only based on two relatively small samples of data from FY 2009. We propose to examine the items more closely and then run IRT models across multiple subsamples across multiple years in order to identify the combinations of items that best represent the latent constructs intended to be measured. Currently, DEOMI does not have the software required to run multidimensional IRT.

However, merely applying IRT will not be sufficient. Differential item functioning (DIF) means that an item performs differently (i.e., measures differently) for a subgroup than it does for another subgroup at the same level on the construct. Thus, an item demonstrating DIF is less valid for at least one of the groups included in the response data (Steinberg & Thissen, 2006; Thissen, & Steinberg, 2009, 2010). In order to increase the validity of the survey, it is necessary to remove items demonstrating DIF. Much of the DEOCS-based research conducted at DEOMI and other institutions is based on demographic-based differences that affect military experiences as well as and relational demography research. The failure to account for DIF in DEOCS items at the very least hampers efforts to detect critical effects that may be of particular relevance to commanders and at most jeopardizes the validity and utility of analyses of the DEOCS data.

From early work on DIF in educational measurement (e.g., Holland & Wainer, 1993), DIF approaches have increasingly been used in other behavior science areas (e.g., Collins, Raju, & Edwards, 2000; Ellis, 1989; Orlando & Marshall, 2002; Schaeffer, 1988; Steinberg, 1994, 2001). The definition of DIF is usually phrase in terms of IRT. As Lord (1980) wrote, “If... an item has a different item response function for one group than for another, it is clear that the item is biased” (p. 212). Item response functions (i.e., trace lines) are in one-to-one correspondence with (sets of) item parameters. Hence, the detection of DIF involves some test of the null hypothesis

that an item has the same parameters for both groups (see Thissen, Steinberg, & Wainer, 1988, 1993).

Therefore, we propose not only to conduct multi-dimensional IRT analyses but also DIF analyses to derive a final set of items assessing the latent constructs of strategic interest. We anticipate that this approach will not only lead to the removal of poorly-behaving items (e.g., the items comprising the positive EO behaviors scale) but also reduce the number of items needed to assess the latent constructs that will remain in the revised version of the DEOCS.

Phase Two

Once IRT and DIF have guided the development of revised scales, theoretically-based testing of practically relevant hypotheses would be appropriate. In other words, an important step in assessing the validity of the current constructs would be to test hypotheses showing linkages between the currently-measured constructs. We present in Figure 6 an example of models that we have in mind. As shown there, the model refers globally to elements of the EO climate in terms of “hostile work environment,” which predicts both experienced sexual harassment and discrimination (i.e., based on gender, age, race/ethnicity, disability, and/or religion), which predicts unit cohesion, which then predicts unit effectiveness.

We also anticipate testing longitudinal models. Given the resources applied to collecting the DEOCS data and reporting DEOCS results, important research questions include: (1) do units as defined by UIC improve [in terms of DEOCS scores] from year to year? (2) What are characteristics (i.e., in terms of service, size, previous and current DEOCS scores, location, demographic composition, etc.) of the units that improve? (3) What are characteristics of the units that do not improve, are consistently doing badly, and/or get worse? (4) What are characteristics of the units that are consistently doing well? Results of analyses investigating

these research questions are likely to not only guide content-based efforts to revise the DEOCS but also lead to dramatically different approaches in reporting DEOCS results and strategies to take follow-up action.

Phase Three

Clearly missing from the EO climate literature is a linkage of DEOCS data with objective performance data. Research in the service-relevant facets of organizational climate well illustrates the importance and potential of linking climate with unit- or organization-level outcomes.

Researchers have employed the construct of service climate to refer to what employees experience in terms of organizational practices regarding service delivery (e.g., Schneider & White, 2004). Service climate reflects the organization's orientation toward service as a strategically important (Schneider, White, & Paul, 1998) and, as a result, impacts worker motivation regarding service delivery. Perceptions of service climate include such issues as training, rewards and recognition, service strategy, service support, logistics, customer orientation, customer attention/retention, communications regarding service, customer feedback, and managerial practices (Johnson, 1996; Schneider et al., 1998). These perceptions influence customer-oriented employee behavior by indicating what the organization values and rewards, motivating employee behaviors provide levels of service congruent with those values (Liao & Chuang, 2007; Liao, Toyo, Lepak, & Hong, 2009). A body of literature known as linkage research (Wiley, 1991) has consistently demonstrated that the service climate of a business unit is reflected in external customers' experiences (Schneider & White, 2004). Researchers have reported the linkage between service climate and customer-related outcomes (e.g., satisfaction and intentions to repurchase) in a variety of service organizations, such as insurance agencies,

restaurants, hotels, and bank branches (e.g., Liao & Chuang, 2004; Schneider & White, 2004). By linking employee perceptions with customer-reported service levels and satisfaction, these scholars have “made the sale” to line management that service climate matters and deserves their attention.

We suspect that some line commanders are more likely to be interested in their DEOCS reports when they are confident that those scores “matter.” We argue that they do matter and that the DEOCS represents important aspects of a unit’s command climate that affect both the motivation and capability of a unit to perform effectively. Unfortunately, with the lack of linkage studies demonstrating that DEOCS scale scores predict objectively-assessed unit performance, it may be difficult to get the attention of and make the sale to commanders facing multiple simultaneous challenges to unit effectiveness. Therefore, we began efforts to identify and acquire such performance criterion data, including unit re-enlistment rates and unit awards data, the latter of which the Army publishes on its AKO website.

The third phase of the proposed research program to revise the DEOCS is to link the post-IRT/DIF revised DEOCS scores with these objective criterion data. We present in Figure 7 an example of the nature of models that we anticipate testing. As did the model featured in Figure 6, this model refers globally to elements of the EO climate in terms of “hostile work environment,” which predicts both experienced sexual harassment and discrimination, which predicts unit cohesion, which then predicts unit effectiveness. However, this model adds the critical validating criterion variable of objectively-assessed unit performance as an outcome of unit cohesion and the preceding variables in the model. This third phase will also demonstrate which of the constructs in the DEOCS “matters most” – information that is likely to guide strategic revision of the DEOCS content (i.e., removal of irrelevant construct measures).

In sum, we argue that efforts to link DEOCS scale scores to external criteria are likely to be of considerable utility because doing so will provide criterion-related validation of the DEOCS – an important next step in demonstrating the relevance of the DEOCS to field commanders and to guiding revision of the DEOCS.

Phase Four

We suspect that over the years, various commanders, DEOMI staff, and Pentagon officials have raised awareness regarding opportunities to add content to the DEOCS. With one exception, we do not offer new content recommendations in the present paper. Rather, we call for DEOMI officials to conduct or commission field research to identify aspects of command climate that qualitatively appear to differentiate high- vs. low-performing units (i.e., performance in terms of effectiveness, efficiency, and a host of HR-related criteria, such as re-enlistment rates and complaints of discrimination, harassment, and assault). Inclusion of constructs reflecting the factors that differentiate high- vs. low-performing units are likely to yield considerable utility. We emphasize that such efforts should coincide with reviews of the research literature to ensure theoretical relevance, as appropriate. We call for the field research to include a variety of data collection methods, including focus groups with subject matter experts and line commanders.

The process of collecting data from DEOMI's multiple constituencies regarding the content of the DEOCS would provide an opportunity to identify "customer" input on required and desired formats for future DEOCS reports. We contend that the current format is overwhelming in detail and volume, is cumbersome, and lacks sufficient information to direct follow-up actions specific to the command. We offer in Figure 8 an example of an alternative approach to include in the Executive Summary of each commander's report. As shown there, a commander could be given what is called a "Quartile Analysis." In fact, this in no way reflects a

specific statistical procedure. Rather, it is simply a visual way of presenting in what areas the commander should pay most attention. The format presents some of the DEOCS scales in four quartiles: (1) underperforming-important, (2) underperforming-less important, (3) performing well-important, and (4) performing well-important. Programming code can be written so that each commander received a “Quartile Analysis” in the executive summary with data unique to the command. Typically, “underperforming” refers to scale scores below some a priori-specified standard (e.g., .5 standard deviation units \leq the mean of similar units in the Army), and “important” refers to the scales with the strongest correlations to outcome variables (e.g., re-enlistment rates, unit effectiveness, etc.) of relevance to that branch of service (or smaller unit, such as division or fleet). The example presented in Figure 8 reports that the DEOCS data from this [fictitious] command suggest that the commander should take steps to address the unit’s race/ethnic discrimination climate, unit cohesion, and emotional exhaustion.

We emphasize that the “Quartile Analysis” that we presented here does not necessarily constitute best practice. Indeed, we are unaware of empirical studies that have identified the optimal formats for executive summaries. However, we emphasize that efforts to report what commanders need to know in some sort of a more relevant executive summary than currently exists would be of considerable utility. Along these lines, we strongly recommend that DEOMI opens a line of business that provides post-DEOCS consulting; that is, a DEOMI-based group could go out in the field to consult with commands having problems. It is unlikely that merely receiving DEOCS reports is sufficient to position commanders to address the problems reported.

The area of content we encourage DEOMI officials to strongly consider involve variables that fall into the category of occupational health. The limited research investigating links between diversity issues and employee health lacks clarity. Whereas, studies show

discrimination to be detrimental to one's mental and physical health, other studies have yielded inconsistent findings. An example is the association between racial and gender isolation in the workplace and mental health (Enchautegui-de-Jesus, Hughes, Johnston, & Oh, 2006; Foreman, 1995). Emotional exhaustion is the central dimension of burnout, a state of exhaustion, cynicism, and inefficacy that results from chronic stress. Exhaustion is the energy component of burnout and has received the most consistent empirical support in its association with predictors and outcomes compared to the cynicism and inefficacy dimensions (Halbesleben & Buckley, 2004; Maslach & Leiter, 2008; Maslach, Shaufeli, & Leiter, 2001). A primary responsibility of leaders is to provide resources (e.g., emotional support, functioning equipment, and clear communication) so that employees can successfully complete work; this is one way leaders help subordinates avoid exhaustion (Chemers, 2000; Harris & Kacmar, 2006; Hobfoll, 2001; Maslach et al., 2001). Including measures of emotional exhaustion would permit DEOCS researchers to demonstrate links between the command climate and occupational health, which influences not only important costs (e.g., healthcare) but also dysfunctional coping behaviors (e.g., alcoholism, AWOL, and suicide) of importance to the Department of Defense.

Phase Five

The final phase would consist of pilot-testing the revised DEOCS, which would likely include: (1) assessments by multiple constituencies measured in focus groups (and other available means); (2) application of IRT and DIF analyses to data collected using the revised DEOCS, followed by further revision, as appropriate; and (3) model-testing to ensure that the theoretically-predicted relationships hold. We emphasize that it is critical that data collected during the pilot-testing phase "behave," so that DEOMI officials will be positioned to sell the DEOCS and not only well constructed but also valid and important.

Summary and Conclusion

Over the years, the MEOCS and DEOCS have provided both commanders and senior leaders with insightful and helpful data. Similarly, they have provided scholars with opportunities to test and apply theories that have helped identify links between EO climate and related job attitudes. Considering anecdotal evidence regarding inconsistent findings regarding the a priori factor structure of the DEOCS and the preliminary results of the IRT analyses reported in this paper and Appendix B, we argue that the time is ripe to approach revision of the DEOCS along two pathways: (1) an empirically-driven pathway using quantitative analyses described in Phases One, Two, Three, and Five in this paper, and (2) an empirically-driven pathway using qualitative analyses described in Phase Four in this paper. By following these pathways, DEOMI is likely to develop a revised DEOCS that has stronger psychometric characteristics, greater theory-based content validity, greater criterion-related validity, greater face validity (to respondents and commanders), and, most importantly, greater utility for commanders and senior leaders in the Pentagon.

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Table 1.

Item parameters for Ethnic/Racial Discrimination Climate Scale (Original)

Item	<i>a</i>	<i>s.e.</i>	<i>b</i> ₁	<i>s.e.</i>	<i>b</i> ₂	<i>s.e.</i>	<i>b</i> ₃	<i>s.e.</i>	<i>b</i> ₄	<i>s.e.</i>	<i>b</i> ₅	<i>s.e.</i>
1	1.46	0.02	-1.83	0.02	-1.18	0.02	-0.2	0.01	1.02	0.02	4.59	0.09
2	0.64	0.02	-4.51	0.12	-3.01	0.08	-1.34	0.04	0.36	0.02	8.75	0.26
3	0.81	0.02	-4.46	0.1	-3.19	0.07	-1.54	0.03	-0.07	0.02	7.07	0.18
4	3.12	0.05	-2.06	0.02	-1.69	0.02	-1.2	0.01	-0.49	0.01	3.02	0.04
5	4.67	0.09	-2.12	0.02	-1.81	0.02	-1.31	0.01	-0.67	0.01	2.74	0.04
6	2.93	0.04	-2.45	0.03	-2.04	0.02	-1.38	0.01	-0.67	0.01	3.02	0.04
7	3.04	0.05	-2.31	0.03	-1.93	0.02	-1.33	0.01	-0.63	0.01	3.02	0.04
8	0.89	0.02	-3.97	0.08	-2.87	0.06	-1.5	0.03	-0.14	0.02	6.68	0.17
9	0.94	0.02	-3.67	0.07	-2.69	0.05	-1.37	0.03	-0.08	0.02	6.3	0.15
10	2.02	0.03	-1.99	0.02	-1.5	0.02	-0.83	0.01	0.09	0.01	3.7	0.06
11	1.82	0.03	-1.88	0.02	-1.33	0.02	-0.61	0.01	0.36	0.01	3.99	0.07

Table 2.

Item parameters for Ethnic/Racial Discrimination Climate Scale (Modified)

Item	<i>a</i>	<i>s.e.</i>	<i>b</i> ₁	<i>s.e.</i>	<i>b</i> ₂	<i>s.e.</i>	<i>b</i> ₃	<i>s.e.</i>	<i>b</i> ₄	<i>s.e.</i>	<i>b</i> ₅	<i>s.e.</i>
1	2.42	0.03	-1.46	0.02	-0.94	0.01	-0.15	0.01	0.83	0.01	3.48	0.06
4	1.86	0.03	-2.55	0.04	-2.04	0.03	-1.4	0.02	-0.56	0.01	3.57	0.06
5	2.14	0.04	-2.74	0.04	-2.27	0.03	-1.6	0.02	-0.79	0.01	3.31	0.05
6	1.73	0.03	-3.17	0.05	-2.57	0.04	-1.69	0.02	-0.79	0.01	3.66	0.06
7	1.86	0.03	-2.87	0.04	-2.34	0.03	-1.57	0.02	-0.71	0.01	3.54	0.06
11	4.04	0.08	-1.62	0.02	-1.23	0.01	-0.68	0.01	0.09	0.01	2.91	0.04
12	3.86	0.08	-1.48	0.01	-1.06	0.01	-0.49	0.01	0.31	0.01	3.04	0.05

Table 3.

Marginal fit (X^2) and Standardized LD X^2 Statistics for Ethnic/Racial Discrimination Climate Scale

Item	<i>Marginal X^2</i>	1	4	5	6	7	11
1	18.0						
4	13.6	315.8					
5	24.4	366.6	<i>1101.9</i>				
6	17.2	294.8	<i>641.9</i>	<i>823.2</i>			
7	18.6	303.1	<i>573.7</i>	<i>702.9</i>	<i>852.6</i>		
11	53.6	<i>262.4</i>	276.5	259.9	301.6	290.7	
12	73.6	<i>379.5</i>	372.7	419.9	399.1	347.5	<i>649.1</i>

Note: Numbers that appear in italicized font represent interrelationships not accounted for completely by the model (i.e., local dependence), while items in bold font show items that lack local dependence.

Table 4.

Descriptive Statistics and Intercorrelation Matrix

Item	Mean	S.D.	1	4	5	6	7	11
1	3.57	1.28						
4	4.44	0.99	0.32					
5	4.59	0.84	0.32	0.71				
6	4.58	0.82	0.29	0.56	0.65			
7	4.54	0.87	0.31	0.55	0.63	0.62		
11	4.12	1.15	0.65	0.41	0.43	0.40	0.42	
12	3.93	1.23	0.75	0.36	0.38	0.35	0.37	0.81

Figure 1.

Trace line and information curve for Item 1

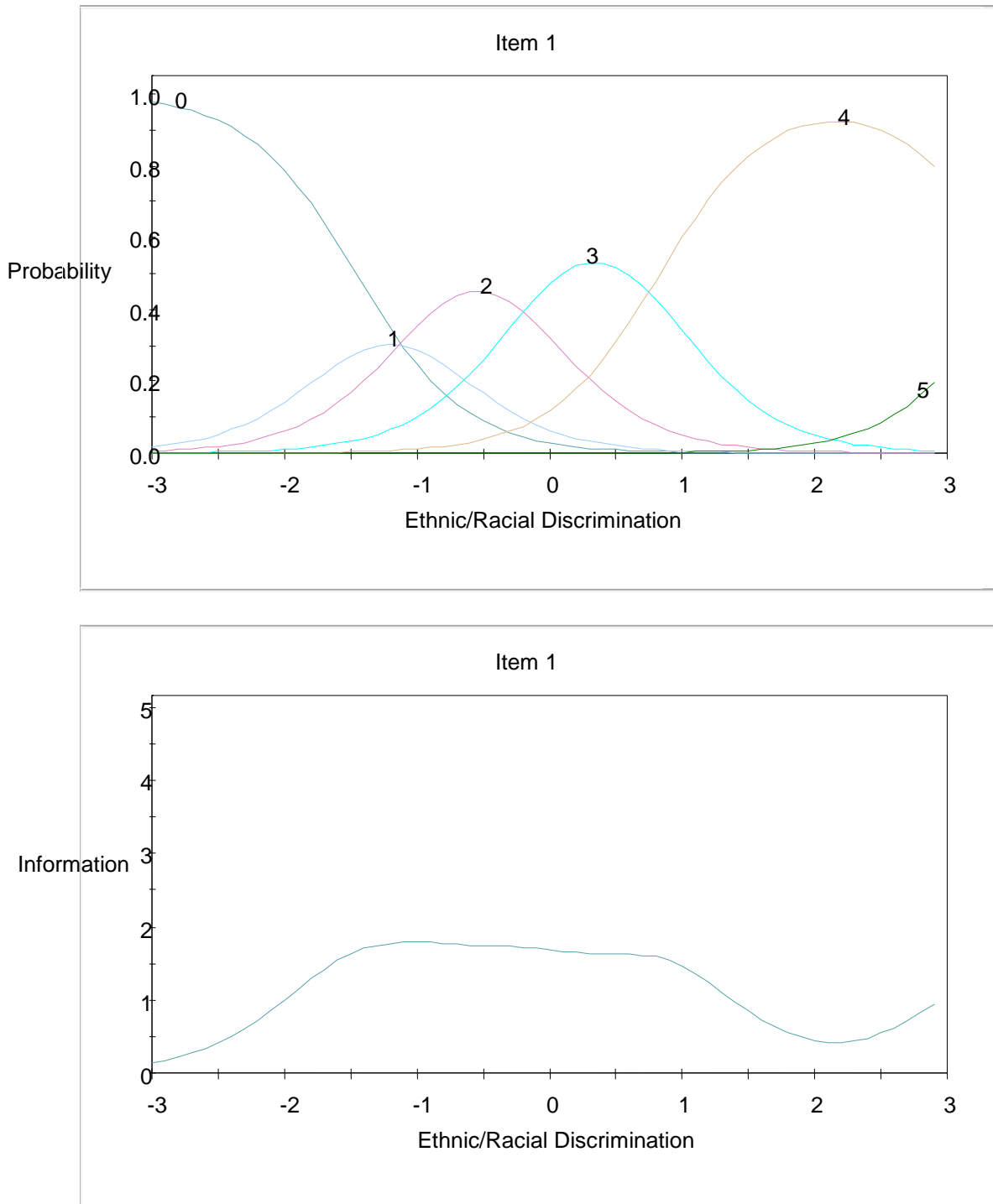


Figure 2.

Trace line and information curve for Item 4

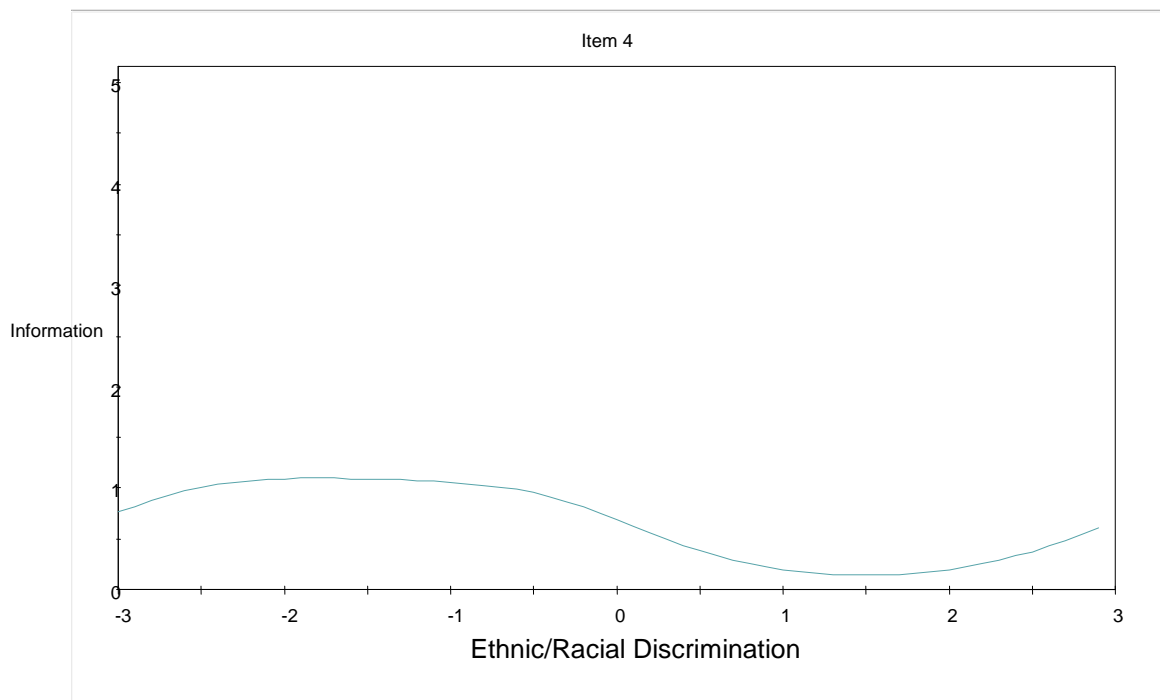
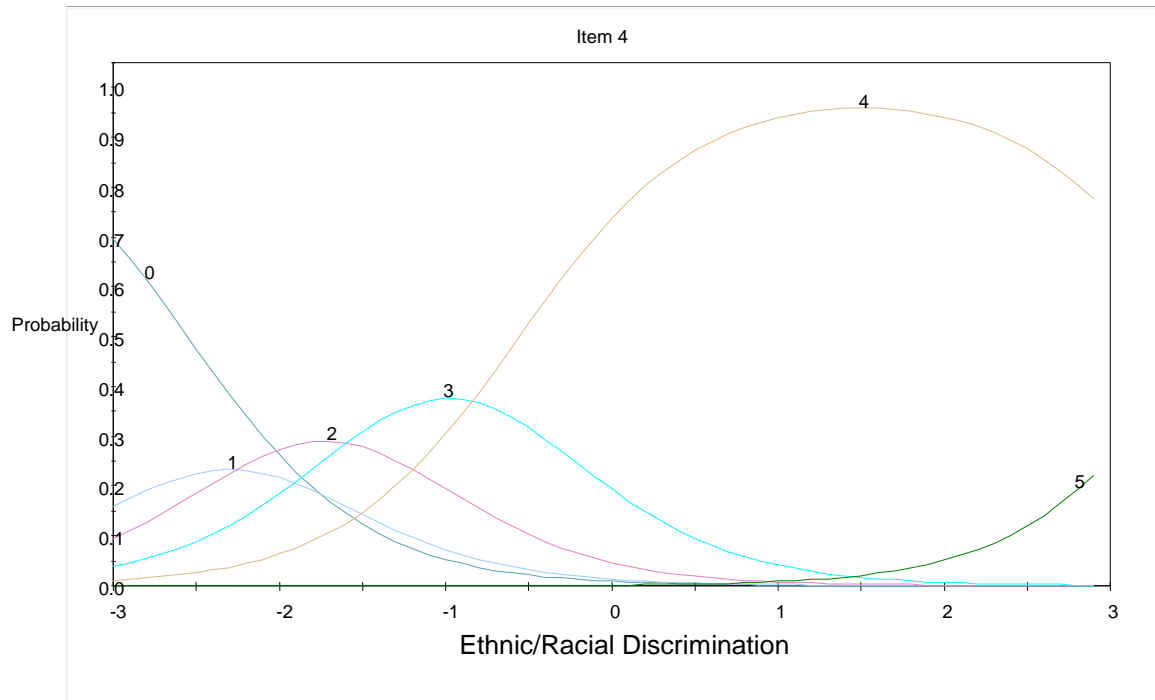


Figure 3.

Trace line and information curve for Item 2

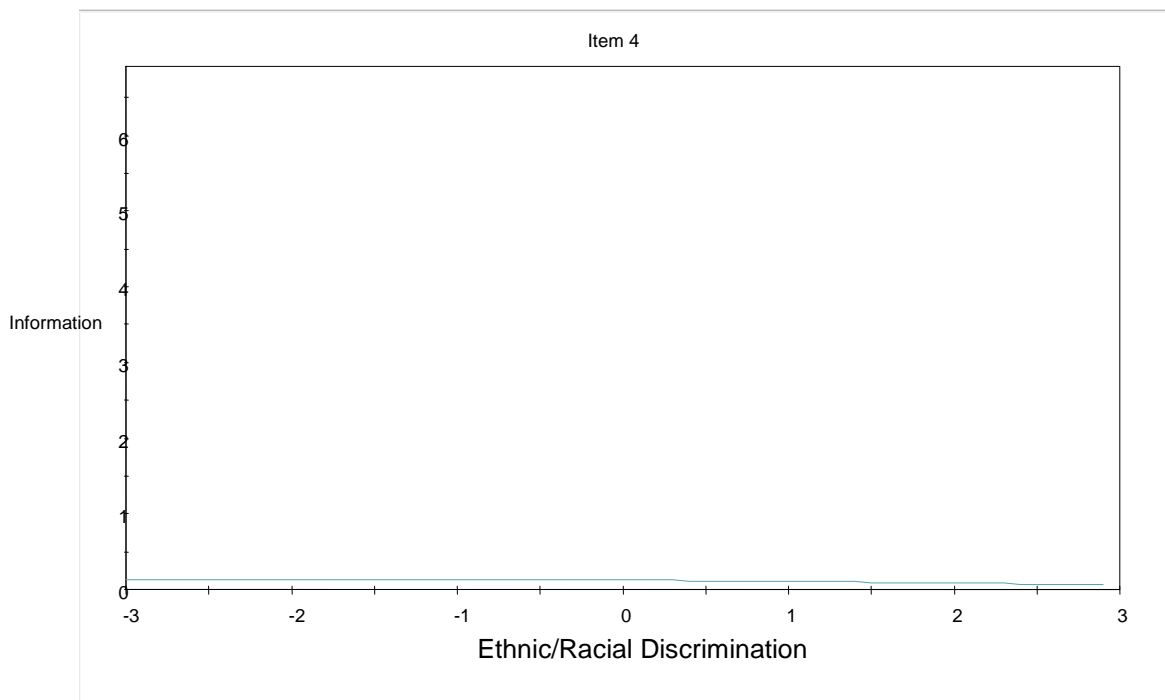
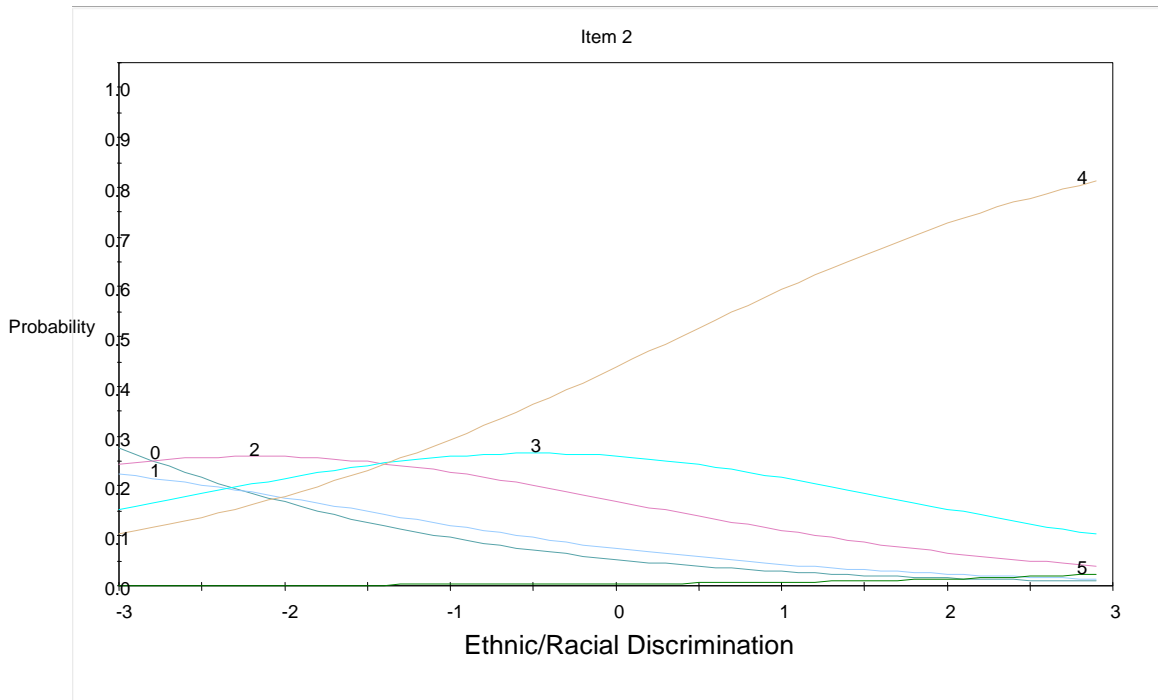


Figure 4.

Total Information Curve for Race/Ethnic Discrimination Climate Scale

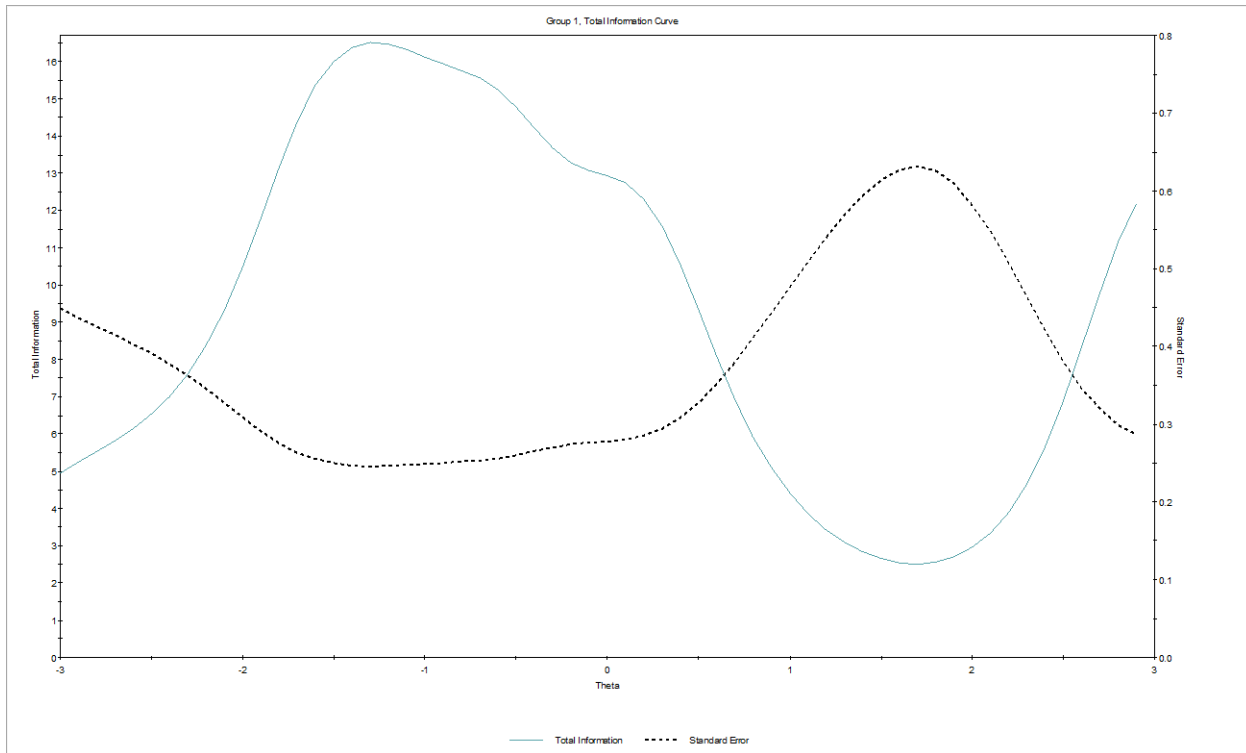


Figure 5.

Test Characteristic Curve

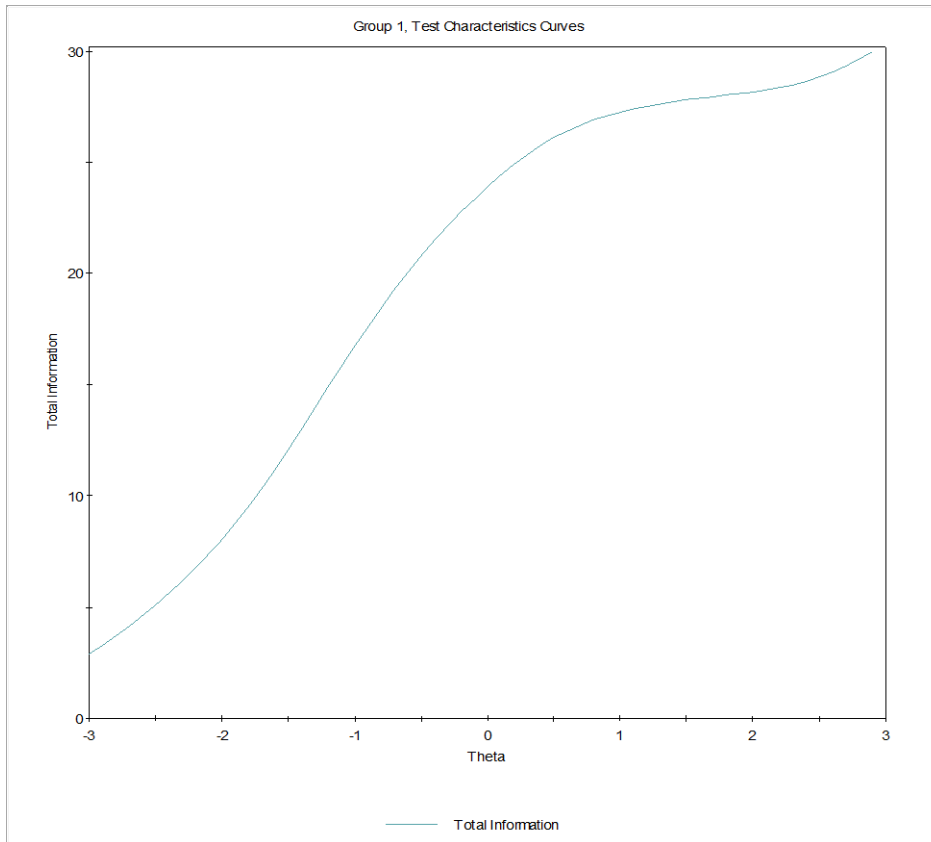


Figure 6.

Example of Models to Be Tested.

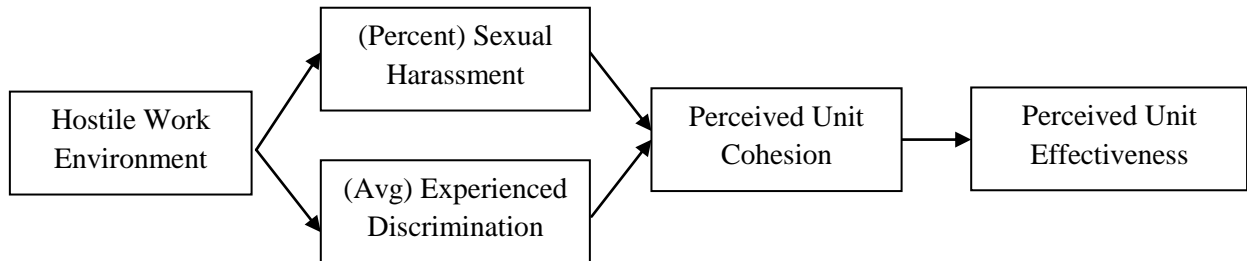


Figure 7.

Example of Models to be Tested including Objective Unit-Level Performance Data.

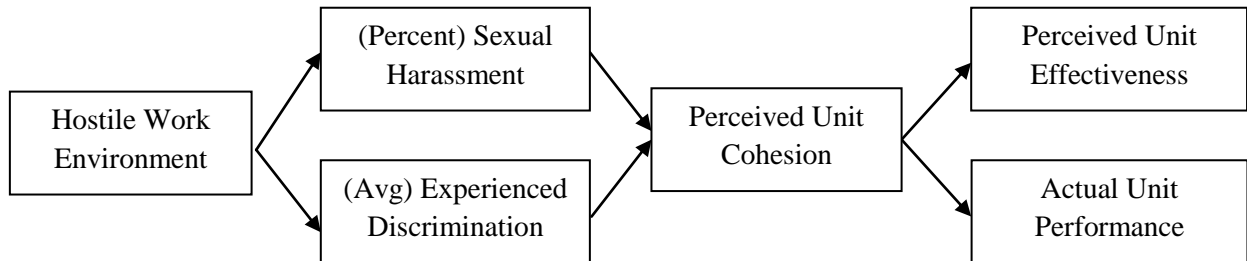


Figure 8.

Example of "Quartile Analysis" Report Format.

	Underperforming	Performing Well
Important	Emotional exhaustion Unit effectiveness Race/ethnic discrimination climate	Sexual harassment/sex discrimination Age discrimination
Less Important	Religious discrimination Disability discrimination	Sex discrimination Leader cohesion Job Satisfaction

Appendix A

Race/ethnic Climate Discrimination Scale's 11 Items

1. A person told several jokes about a particular race/ethnicity.
2. Supervisors of different racial or ethnic backgrounds were seen having lunch together.
3. Personnel of different racial or ethnic backgrounds were seen having lunch together.
4. A supervisor did not select a qualified subordinate for promotion because of their race/ethnicity.
5. A member was assigned less desirable office space because of their race/ethnicity.
6. The person in charge of the organization changed the duty assignments when it was discovered that two people of the same race/ethnicity were assigned to the same sensitive area on the same shift.
7. While speaking to a group, the person in charge of the organization took more time to answer questions from one race/ethnic group than from another group.
8. Members from different racial or ethnic groups were seen socializing together.
9. Members joined friends of a different racial or ethnic group at the same table in the cafeteria or designated eating area.
10. Offensive racial/ethnic names were frequently heard.
11. Racial/ethnic jokes were frequently heard.

Appendix B

Initial and Replicated IRT Analyses of the Other DEOCS Scales

Table B-1: *Sexual Harassment Discrimination Climate* ($\alpha = .83$)

Item	<i>a</i>	<i>s.e.</i>	<i>b</i> ₁	<i>s.e.</i>	<i>b</i> ₂	<i>s.e.</i>	<i>b</i> ₃	<i>s.e.</i>	<i>b</i> ₄	<i>s.e.</i>	<i>b</i> ₅	<i>s.e.</i>
EO10: When a person complained of sexual harassment, the supervisor said, "You're being too sensitive"	1.8	0.03	-2.82	0.04	-2.29	0.03	-1.55	0.02	-0.66	0.01	2.77	0.04
EO13: A supervisor referred to subordinates of one gender by their first names in public while using titles for subordinates of the other gender	1.78	0.03	-2.62	0.03	-2.08	0.03	-1.35	0.02	-0.46	0.01	2.86	0.04
EO14: Sexist jokes were frequently heard	3.61	0.06	-1.67	0.02	-1.26	0.01	-0.69	0.01	0.09	0.01	2.44	0.03
EO15: Someone made sexually suggestive remarks about another person	3.55	0.06	-1.64	0.02	-1.24	0.01	-0.71	0.01	0.03	0.01	2.39	0.03

Note: There is some local dependence between 14 and 15, but it may be best to leave both items because of fit and the small amount of items. RMSEA = .02.

Table B-2: *Replication of Sexual Harassment Discrimination Climate*

Item	<i>a</i>	<i>s.e.</i>	<i>b</i> ₁	<i>s.e.</i>	<i>b</i> ₂	<i>s.e.</i>	<i>b</i> ₃	<i>s.e.</i>	<i>b</i> ₄	<i>s.e.</i>	<i>b</i> ₅	<i>s.e.</i>
EO10: When a person complained of sexual harassment, the supervisor said, "You're being too sensitive"	1.85	0.03	-2.73	0.04	-2.17	0.03	-1.42	0.02	-0.48	0.01	3.54	0.05
EO13: A supervisor referred to subordinates of one gender by their first names in public while using titles for subordinates of the other gender	1.82	0.03	-2.49	0.03	-1.96	0.02	-1.21	0.02	-0.31	0.01	3.66	0.06
EO14: Sexist jokes were frequently heard	3.86	0.06	-1.56	0.02	-1.13	0.01	-0.54	0.01	0.24	0.01	3.01	0.05
EO15: Someone made sexually suggestive remarks about another person	4.22	0.08	-1.51	0.01	-1.11	0.01	-0.57	0.01	0.15	0.01	2.9	0.04

Note: RMSEA = .02.

Table B-3: *Religious Discrimination climate: ($\alpha = .80$)*

Item	<i>a</i>	<i>s.e.</i>	<i>b</i> ₁	<i>s.e.</i>	<i>b</i> ₂	<i>s.e.</i>	<i>b</i> ₃	<i>s.e.</i>	<i>b</i> ₄	<i>s.e.</i>	<i>b</i> ₅	<i>s.e.</i>
EO16: A well-qualified person was denied a job because the supervisor did not like the religious beliefs of the person	3.74	0.08	-2.45	0.03	-2.1	0.02	-1.6	0.02	-0.97	0.01	2.14	0.02
EO17: A demeaning comment was made about a certain religious group	2.12	0.03	-2.27	0.03	-1.84	0.02	-1.26	0.02	-0.41	0.01	2.7	0.03
EO18: A supervisor favored a worker who had the same religious beliefs as the supervisor	4.3	0.12	-2.31	0.03	-1.95	0.02	-1.4	0.01	-0.69	0.01	2.14	0.02

Note: RMSEA = .04.

Table B-4: *Replication of Religious Discrimination climate*

Item	<i>a</i>	<i>s.e.</i>	<i>b</i> ₁	<i>s.e.</i>	<i>b</i> ₂	<i>s.e.</i>	<i>b</i> ₃	<i>s.e.</i>	<i>b</i> ₄	<i>s.e.</i>	<i>b</i> ₅	<i>s.e.</i>
EO16: A well-qualified person was denied a job because the supervisor did not like the religious beliefs of the person	4.14	0.1	-2.35	0.03	-2.01	0.02	-1.51	0.01	-0.82	0.01	2.73	0.04
EO17: A demeaning comment was made about a certain religious group	2.2	0.03	-2.16	0.03	-1.75	0.02	-1.14	0.01	-0.26	0.01	3.33	0.05
EO18: A supervisor favored a worker who had the same religious beliefs as the supervisor	4.8	0.15	-2.21	0.02	-1.84	0.02	-1.32	0.01	-0.59	0.01	2.72	0.04

Note: RMSEA = .03.

Table B-5: *Age Discrimination Climate* ($\alpha = .89$)

Item	<i>a</i>	<i>s.e.</i>	<i>b</i> ₁	<i>s.e.</i>	<i>b</i> ₂	<i>s.e.</i>	<i>b</i> ₃	<i>s.e.</i>	<i>b</i> ₄	<i>s.e.</i>	<i>b</i> ₅	<i>s.e.</i>
EO19: A younger person was selected for a prestigious assignment over an older person who was equally, if not slightly better qualified	4	0.06	-2.02	0.02	-1.62	0.02	-1.02	0.01	-0.34	0.01	2.22	0.02
EO20: An older individual did not get the same career opportunities as did a younger individual	5.19	0.11	-1.97	0.02	-1.59	0.01	-1.01	0.01	-0.33	0.01	2.1	0.02
EO22: A young supervisor did not recommend promotion for a qualified older worker	3.43	0.05	-2.31	0.02	-1.9	0.02	-1.29	0.01	-0.6	0.01	2.22	0.02

Note: RMSEA = .04. The trace lines and information curves appear acceptable, but worrisome is that the slopes (the *a* parameters are so larger) tend to be within the range of .5 and 2.5.

Table B-6: *Replication of Age Discrimination Climate*

Item	<i>a</i>	<i>s.e.</i>	<i>b</i> ₁	<i>s.e.</i>	<i>b</i> ₂	<i>s.e.</i>	<i>b</i> ₃	<i>s.e.</i>	<i>b</i> ₄	<i>s.e.</i>	<i>b</i> ₅	<i>s.e.</i>
EO19: A younger person was selected for a prestigious assignment over an older person who was equally, if not slightly better qualified	4.25	0.07	-1.92	0.02	-1.51	0.01	-0.96	0.01	-0.27	0.01	2.76	0.04
EO20: An older individual did not get the same career opportunities as did a younger individual	5.37	0.13	-1.91	0.02	-1.53	0.01	-0.98	0.01	-0.27	0.01	2.67	0.03
EO22: A young supervisor did not recommend promotion for a qualified older worker	3.46	0.05	-2.19	0.02	-1.82	0.02	-1.24	0.01	-0.51	0.01	2.82	0.04

Note: RMSEA = .03.

Table B-7: *Disability Discrimination Climate* ($\alpha = .85$)

Item	<i>a</i>	<i>s.e.</i>	<i>b</i> ₁	<i>s.e.</i>	<i>b</i> ₂	<i>s.e.</i>	<i>b</i> ₃	<i>s.e.</i>	<i>b</i> ₄	<i>s.e.</i>	<i>b</i> ₅	<i>s.e.</i>
EO21: A worker with a disability was not given the same opportunities as other workers	3.02	0.05	-2.2	0.02	-1.82	0.02	-1.27	0.01	-0.6	0.01	2.31	0.03
EO23: A career opportunity presentation to a worker with a disability focused on the lack of opportunity elsewhere; to others, it emphasized promotion	3.78	0.07	-2.37	0.03	-2.01	0.02	-1.3	0.01	-0.64	0.01	2.18	0.02
EO24: A supervisor did not appoint a qualified worker with a disability to a new position, but instead appointed another, less qualified worker	4.19	0.08	-2.19	0.02	-1.85	0.02	-1.34	0.01	-0.69	0.01	2.14	0.02

Note: RMSEA = .04.

Table B-8: *Replication of Disability Discrimination Climate*

Item	<i>a</i>	<i>s.e.</i>	<i>b</i> ₁	<i>s.e.</i>	<i>b</i> ₂	<i>s.e.</i>	<i>b</i> ₃	<i>s.e.</i>	<i>b</i> ₄	<i>s.e.</i>	<i>b</i> ₅	<i>s.e.</i>
EO21: A worker with a disability was not given the same opportunities as other workers	3.08	0.05	-2.12	0.02	-1.73	0.02	-1.14	0.01	-0.44	0.01	2.92	0.04
EO23: A career opportunity presentation to a worker with a disability focused on the lack of opportunity elsewhere; to others, it emphasized promotion	3.83	0.07	-2.33	0.03	-1.92	0.02	-1.2	0.01	-0.48	0.01	2.78	0.04
EO24: A supervisor did not appoint a qualified worker with a disability to a new position, but instead appointed another, less qualified worker	5.31	0.14	-2.08	0.02	-1.73	0.02	-1.19	0.01	-0.53	0.01	2.67	0.03

Note: RMSEA = .03.

Table B-9: *Organizational Commitment* (could also be “organizational identification;” $\alpha = .89$)

Item	<i>a</i>	<i>s.e.</i>	<i>b</i> ₁	<i>s.e.</i>	<i>b</i> ₂	<i>s.e.</i>	<i>b</i> ₃	<i>s.e.</i>	<i>b</i> ₄	<i>s.e.</i>	<i>b</i> ₅	<i>s.e.</i>
ORG25: I find that my values and the organization's values are very similar	2.2	0.03	-1.91	0.02	-1.23	0.01	-0.42	0.01	0.7	0.01	3.11	0.04
ORG26: I am proud to tell others that I am part of this organization	2.69	0.04	-1.89	0.02	-1.41	0.01	-0.83	0.01	-0.14	0.01	2.9	0.04
ORG28: Often, I find it difficult to agree with the policies of this organization on important matters relating to its people	1.63	0.02	-1.79	0.02	-0.83	0.01	0.06	0.01	0.88	0.02	3.31	0.05
ORG29: Becoming a part of this organization was definitely not in my best interests	1.8	0.02	-2.08	0.03	-1.48	0.02	-0.69	0.01	-0.03	0.01	3.04	0.04
ORG30: The values of this organization reflect the values of its members	2.32	0.03	-1.94	0.02	-1.22	0.01	-0.29	0.01	0.75	0.01	2.99	0.04
ORG31: This organization is loyal to its members	3.25	0.04	-1.51	0.01	-0.86	0.01	-0.21	0.01	0.69	0.01	2.74	0.04
ORG32: This organization is proud of its people	3.3	0.04	-1.85	0.02	-1.28	0.01	-0.58	0.01	0.31	0.01	2.79	0.04

Note: RMSEA = .08. ORG 27: “Assuming I could stay until eligible for retirement, I do not see many reasons to do so” was excluded because of a low slope. Moreover, this item is not assessing affective or normative commitment. The addition of “intention to leave items” to the DEOCS would likely yield utility.

Table B-10: *Replication of Organizational Commitment*

Item	<i>a</i>	<i>s.e.</i>	<i>b</i> ₁	<i>s.e.</i>	<i>b</i> ₂	<i>s.e.</i>	<i>b</i> ₃	<i>s.e.</i>	<i>b</i> ₄	<i>s.e.</i>	<i>b</i> ₅	<i>s.e.</i>
ORG25: I find that my values and the organization's values are very similar	2.34	0.03	-1.49	0.02	-0.83	0.01	-0.05	0.01	1.03	0.01	3.7	0.07
ORG26: I am proud to tell others that I am part of this organization	3.03	0.04	-1.43	0.01	-0.99	0.01	-0.43	0.01	0.21	0.01	3.4	0.06
ORG28: Often, I find it difficult to agree with the policies of this organization on important matters relating to its people	1.82	0.02	-1.37	0.02	-0.47	0.01	0.42	0.01	1.21	0.02	4.06	0.07
ORG29: Becoming a part of this organization was definitely not in my best interests	2.02	0.02	-1.6	0.02	-1.03	0.01	-0.23	0.01	0.4	0.01	3.68	0.06
ORG30: The values of this organization reflect the values of its members	2.25	0.03	-1.67	0.02	-0.96	0.01	-0.02	0.01	1.08	0.01	3.81	0.07
ORG31: This organization is loyal to its members	3.51	0.04	-1.2	0.01	-0.59	0.01	0.05	0.01	0.92	0.01	3.23	0.05
ORG32: This organization is proud of its people	3.24	0.04	-1.57	0.02	-1.03	0.01	-0.3	0.01	0.57	0.01	3.41	0.06

Note: RMSEA = .08. ORG 27: "Assuming I could stay until eligible for retirement, I do not see many reasons to do so" was again excluded because of a low slope.

Table B-11: *Unit Effectiveness* ($\alpha = .87$)

Item	<i>a</i>	<i>s.e.</i>	<i>b</i> ₁	<i>s.e.</i>	<i>b</i> ₂	<i>s.e.</i>	<i>b</i> ₃	<i>s.e.</i>	<i>b</i> ₄	<i>s.e.</i>	<i>b</i> ₅	<i>s.e.</i>
ORG33: The amount of output of my work group is very high	3.41	0.05	-2.21	0.02	-1.66	0.02	-0.91	0.01	0.07	0.01	2.56	0.03
ORG34: The quality of output of my work group is very high	4.49	0.08	-2.24	0.02	-1.71	0.02	-0.97	0.01	0.01	0.01	2.44	0.03
ORG35: When high priority work arises, such as short deadlines, crash programs, and schedule changes, the people in my work group do an outstanding job in handling these situations	2.42	0.03	-2.45	0.03	-1.84	0.02	-1.04	0.01	-0.07	0.01	2.83	0.04
ORG36: My work group's performance in comparison to similar work groups is very high	2.72	0.04	-2.52	0.03	-1.92	0.02	-0.9	0.01	0.04	0.01	2.73	0.03

Note: RMSEA = .02.

Table B-12: *Replication of Unit Effectiveness*

Item	<i>a</i>	<i>s.e.</i>	<i>b</i> ₁	<i>s.e.</i>	<i>b</i> ₂	<i>s.e.</i>	<i>b</i> ₃	<i>s.e.</i>	<i>b</i> ₄	<i>s.e.</i>	<i>b</i> ₅	<i>s.e.</i>
ORG33: The amount of output of my work group is very high	3.56	0.05	-2.16	0.02	-1.63	0.02	-0.86	0.01	0.12	0.01	3.2	0.05
ORG34: The quality of output of my work group is very high	4.74	0.09	-2.11	0.02	-1.6	0.01	-0.88	0.01	0.1	0.01	3.11	0.05
ORG35: When high priority work arises, such as short deadlines, crash programs, and schedule changes, the people in my work group do an outstanding job in handling these situations	2.23	0.03	-2.31	0.03	-1.71	0.02	-0.91	0.01	0.1	0.01	3.76	0.07
ORG36: My work group's performance in comparison to similar work groups is very high	2.6	0.03	-2.4	0.03	-1.83	0.02	-0.8	0.01	0.15	0.01	3.52	0.06

Note: RMSEA = .02.

Table B-13: *Unit cohesion* ($\alpha = .90$)

Item	<i>a</i>	<i>s.e.</i>	<i>b</i> ₁	<i>s.e.</i>	<i>b</i> ₂	<i>s.e.</i>	<i>b</i> ₃	<i>s.e.</i>	<i>b</i> ₄	<i>s.e.</i>	<i>b</i> ₅	<i>s.e.</i>
ORG37: My work group works well together as a team	3.17	0.04	-2.21	0.02	-1.64	0.02	-0.99	0.01	-0.03	0.01	2.56	0.03
ORG38: Members of my work group pull together to get the job done	3.29	0.05	-2.36	0.03	-1.85	0.02	-1.17	0.01	-0.21	0.01	2.6	0.03
ORG39: Members of my work group really care about each other	3.82	0.06	-1.87	0.02	-1.38	0.01	-0.64	0.01	0.34	0.01	2.51	0.03
ORG40: Members of my work group trust each other	3.77	0.05	-1.86	0.02	-1.32	0.01	-0.59	0.01	0.42	0.01	2.49	0.03

Note: RMSEA = .02. Possible local dependence with items 39 and 40.

Table B-13: *Replication of unit cohesion*

Item	<i>a</i>	<i>s.e.</i>	<i>b</i> ₁	<i>s.e.</i>	<i>b</i> ₂	<i>s.e.</i>	<i>b</i> ₃	<i>s.e.</i>	<i>b</i> ₄	<i>s.e.</i>	<i>b</i> ₅	<i>s.e.</i>
ORG37: My work group works well together as a team	4.01	0.07	-1.98	0.02	-1.43	0.01	-0.82	0.01	0.1	0.01	3.09	0.05
ORG38: Members of my work group pull together to get the job done	3.67	0.06	-2.16	0.02	-1.61	0.02	-0.98	0.01	-0.06	0.01	3.16	0.05
ORG39: Members of my work group really care about each other	3.53	0.05	-1.73	0.02	-1.23	0.01	-0.47	0.01	0.52	0.01	3.19	0.05
ORG40: Members of my work group trust each other	3.41	0.05	-1.69	0.02	-1.17	0.01	-0.41	0.01	0.64	0.01	3.2	0.05

Note: RMSEA = .02.

Table B-14: *Organizational Cohesion* ($\alpha = .94$)

Item	<i>a</i>	<i>s.e.</i>	<i>b</i> ₁	<i>s.e.</i>	<i>b</i> ₂	<i>s.e.</i>	<i>b</i> ₃	<i>s.e.</i>	<i>b</i> ₄	<i>s.e.</i>	<i>b</i> ₅	<i>s.e.</i>
ORG41: Top leaders in my organization work well together as a team	4.24	0.05	-1.58	0.01	-1.04	0.01	-0.35	0.01	0.54	0.01	2.4	0.03
ORG42: Top leaders in my organization pull together to get the job done	4.27	0.05	-1.75	0.02	-1.2	0.01	-0.5	0.01	0.36	0.01	2.38	0.03
ORG43: Top leaders in my organization really care about each other	5.39	0.08	-1.58	0.01	-1.09	0.01	-0.2	0.01	0.58	0.01	2.33	0.02
ORG44: Top leaders in my organization trust each other	5.13	0.07	-1.63	0.01	-1.14	0.01	-0.22	0.01	0.57	0.01	2.34	0.02

Note: RMSEA = .02. The trace lines and information curves appear acceptable, but worrisome is that the slopes (the *a* parameters are so larger) tend to be within the range of .5 and 2.5.

Table B-15: *Replication of Organizational Cohesion*

Item	<i>a</i>	<i>s.e.</i>	<i>b</i> ₁	<i>s.e.</i>	<i>b</i> ₂	<i>s.e.</i>	<i>b</i> ₃	<i>s.e.</i>	<i>b</i> ₄	<i>s.e.</i>	<i>b</i> ₅	<i>s.e.</i>
ORG41: Top leaders in my organization work well together as a team	4.33	0.05	-1.36	0.01	-0.85	0.01	-0.17	0.01	0.69	0.01	3.05	0.05
ORG42: Top leaders in my organization pull together to get the job done	4.18	0.05	-1.58	0.01	-1.03	0.01	-0.33	0.01	0.53	0.01	3.06	0.05
ORG43: Top leaders in my organization really care about each other	5.7	0.08	-1.37	0.01	-0.91	0.01	-0.03	0.01	0.75	0.01	2.95	0.05
ORG44: Top leaders in my organization trust each other	5.35	0.07	-1.42	0.01	-0.96	0.01	-0.05	0.01	0.74	0.01	2.97	0.05

Note: RMSEA = .02.

Table B-16: *Job satisfaction* ($\alpha = .83$)

Item	<i>a</i>	<i>s.e.</i>	<i>b</i> ₁	<i>s.e.</i>	<i>b</i> ₂	<i>s.e.</i>	<i>b</i> ₃	<i>s.e.</i>	<i>b</i> ₄	<i>s.e.</i>	<i>b</i> ₅	<i>s.e.</i>
ORG45: The chance to help people and improve their welfare through the performance of my job	2.53	0.03	-2.3	0.03	-1.74	0.02	-0.71	0.01	0.37	0.01	2.83	0.04
ORG46: My amount of effort compared to the efforts of my co-workers	1.89	0.03	-2.55	0.03	-1.77	0.02	-0.81	0.01	0.43	0.01	3.16	0.04
ORG47: The recognition and pride my family has in the work I do	2.02	0.03	-2.76	0.04	-2.11	0.02	-1.02	0.01	-0.12	0.01	3.19	0.04
ORG48: The chance to acquire valuable skills in my job that prepare me for future opportunities	2.67	0.04	-1.9	0.02	-1.4	0.02	-0.71	0.01	0.25	0.01	2.86	0.04
ORG49: My job as a whole	2.88	0.04	-1.86	0.02	-1.32	0.01	-0.7	0.01	0.35	0.01	2.61	0.03

Note: RMSEA = .01.

Table B-17: *Replication of Job Satisfaction*

Item	<i>a</i>	<i>s.e.</i>	<i>b</i> ₁	<i>s.e.</i>	<i>b</i> ₂	<i>s.e.</i>	<i>b</i> ₃	<i>s.e.</i>	<i>b</i> ₄	<i>s.e.</i>	<i>b</i> ₅	<i>s.e.</i>
ORG45: The chance to help people and improve their welfare through the performance of my job	2.44	0.03	-2.14	0.02	-1.58	0.02	-0.53	0.01	0.62	0.01	3.64	0.06
ORG46: My amount of effort compared to the efforts of my co-workers	1.73	0.02	-2.5	0.03	-1.72	0.02	-0.64	0.01	0.63	0.01	4.26	0.08
ORG47: The recognition and pride my family has in the work I do	1.94	0.03	-2.58	0.03	-2.04	0.02	-0.87	0.01	-0.02	0.01	4.07	0.08
ORG48: The chance to acquire valuable skills in my job that prepare me for future opportunities	2.67	0.04	-1.72	0.02	-1.23	0.01	-0.51	0.01	0.45	0.01	3.57	0.06
ORG49: My job as a whole	2.86	0.04	-1.62	0.02	-1.09	0.01	-0.44	0.01	0.61	0.01	3.28	0.05

Note: RMSEA = .01.