

Employer Attitudes Towards Persons who are Blind or Visually Impaired as Employees:

Initial Development of a Measurement Instrument

Employment rates of working-age persons with visual impairments have consistently been low; in 2012, only 31% of persons aged 18 to 64 were employed (Bureau of Labor Statistics, 2013). Negative employer attitudes are generally thought to be one of the reasons that persons with disabilities have consistently had low levels of employment. Specifically for persons who are blind or visually impaired, empirical research has documented that employer attitudes are considered a major barrier to employment (McDonnall, Zhou, & Crudden, 2013; Crudden & McBroom, 1999; Crudden, Williams, McBroom, & Moore, 2002; Kirchner, Johnson, & Harkins, 1997). To genuinely understand employer attitudes, we must first be able to accurately measure them. It is important to do this for several reasons, including the need to document the extent of the problem of negative employer attitudes, and to evaluate the efficacy of any interventions attempted to improve employer attitudes.

There is a long history of measuring attitudes towards persons with disabilities, which began in the late 1950s (Antonak & Livneh, 1988). A large number of scales have been developed for this purpose, although a much more limited number have adequate evidence of reliability and validity. Some scales have been designed to measure attitudes toward people with disabilities in general, such as the Scale of Attitudes Toward Disabled Persons (Antonak, 1982) and the Attitudes Toward Disabled Persons Scale (Yuker, Block, & Campbell, 1960), which are two of the most widely used and psychometrically-evaluated scales. Others have been designed to measure attitudes towards people with certain types of disabilities, including a few developed to measure attitudes towards persons who are blind or visually impaired (Bell & Silverman, 2011; Courington, Lambert, Becker, Ludlow, & Wright, 1983; Cowen, Underberg, & Verrillo,

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1958; Whiteman & Lukoff, 1964). A number of scales have been developed specifically to measure attitudes of employers towards hiring and employing persons with disabilities, as reviewed by Hernandez, Keys, and Balcazar (2000). However, only a few of the scales designed to measure employer attitudes have been evaluated psychometrically (i.e., have evidence for reliability and validity) and none of them are specific to persons who are blind or visually impaired.

Although there is a large body of literature that involves the measurement of employer attitudes towards persons with disabilities, research in this area specific to persons who are blind or visually impaired is surprisingly limited. Two older employer attitude studies included persons who were blind as one of the subgroups of persons with disabilities queried about (Fuqua, Rathburn, & Gade, 1984; Williams, 1972). Both studies clearly indicated that employers expressed greater concerns about hiring persons who are blind compared to persons with other disabilities. More recent research also indicates that employers believe it would be very difficult to hire a person who is blind for the positions they most frequently fill; they consider it more difficult to hire a person who is blind than a person with other disabilities, with the exception of moderate or severe mental retardation (Gilbride, Stensrud, Ehlers, Evans, & Peterson, 2000). It is relevant to note that all of the employers included in the Gilbride et al. study had hired someone with a disability (a client of VR services) in the past. Yet even within this group, persons who are blind were considered difficult to hire. Similar to Gilbride et al.'s findings, employers in New Zealand also considered persons who are blind or visually impaired very difficult to hire – with average ratings between “impossible to hire” to “difficult to hire” – for the positions they most commonly filled, although they expressed positive attitudes towards this population in general (Inglis, 2006). These studies provide support for the idea that persons who are blind or visually

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impaired do experience attitudinal barriers from employers, but these studies did not provide an actual measure of attitudes towards this population as employees.

The purpose of this study was to create an instrument to measure attitudes of employers towards person who are blind or visually impaired as employees. Such an instrument did not previously exist, and social psychologists have strongly recommended that specific criteria (e.g., situational – as employees – and disability-specific – blind or visually impaired) be used when developing attitude instruments (e.g., Ajzen & Fishbein, 1980). The more specific an attitude measure is, the more likely it will be related to behavior (Ajzen, 1988), and the ultimate utility of an attitude measure is its ability to predict behavior – in this case the ability to predict employers' hiring behavior of persons who are blind or visually impaired. Research has also supported the importance of including specific disabilities and specific contexts when measuring attitudes towards persons with disabilities (Grand, Bernier, & Strohmer, 1982; Strohmer, Grand, & Purcell, 1984).

Additionally, it is important to measure attitudes towards persons who are blind or visually impaired specifically because evidence suggests that attitudes towards persons with disabilities in general may not be the same as those towards persons who are blind or visually impaired (e.g., Fuqua et al., 1984; Gilbride et al., 2000; Williams, 1972). This is also supported by the experiences of rehabilitation counselors: a very large majority believe that employers have more negative attitudes towards this population than persons with other disabilities (McDonnall, Zhou, & Crudden, 2013). It is important to measure attitudes towards persons who are blind or visually impaired as employees for a few reasons. In their review of the literature on employer attitudes towards persons with disabilities, Hernandez et al. (2000) found that employers tended to express positive global views towards persons with disabilities, but expressed numerous

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concerns about actually employing people with disabilities. Crandall, Eshleman, and O'Brien (2002) provided evidence that it is not considered socially appropriate to be negative about persons who are blind. From a list of 105 potential prejudice targets, people who are blind were rated the lowest in terms of it being okay to feel negatively towards them, with almost complete agreement among participants that negative feelings towards them are unacceptable. This presents a potential problem with socially desirable responding (SDR) when asking about one's attitude towards persons who are blind or visually impaired. By asking questions about this population specific to a workplace setting, this SDR tendency may be reduced and we may determine a more accurate picture of employers' attitudes toward employing persons who are blind or visually impaired.

Method

Existing Instrument Evaluation

The first step of the instrument creation process was evaluating the possibility of modifying an existing instrument designed to measure attitudes of employers towards persons with disabilities or attitudes towards people who are blind or visually impaired. A number of these instruments were obtained and reviewed, to evaluate their adequacy for the intended purpose. The instruments designed to measure attitudes towards persons who are blind or visually impaired were not appropriate as they consisted of many questions about general attitudes towards this group, rather than attitudes specific to persons who are blind or visually impaired as workers (Bell & Silverman, 2011; Courington et al., 1983; Cowen et al., 1958; Whiteman & Lukoff, 1964). Research has documented that employers may report positive attitudes towards blind or visually impaired people in general, and at the same time not consider them appropriate as employees, making the focus on employment-specific questions in the new

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instrument paramount (Inglis, 2006). The instruments designed to measure attitudes of employers towards persons with disabilities were not considered appropriate for this purpose for various reasons. A number of the measures used in previous research were created by the authors and did not have evidence for reliability or validity (e.g., Chan et al., 2010; Christman & Slaten, 1991; McFarlin, Song, & Sonntag, 1991). Some were created specifically for certain types of disabilities (e.g., psychiatric disabilities, cognitive disabilities) and the items were too specific to the disabilities to be appropriate for persons who are blind or visually impaired (Diksa & Rogers, 1996; Millington, Leierer, & Abadie, 2000; Schmelkin & Berkell, 1989). One consisted of items that focused on policy issues related to employing persons with disabilities and was not considered appropriate (Loo, 2004). None of the existing instruments reviewed was appropriate in its current form, or would have required modifications that would be too extensive; therefore, a new instrument was developed.

Initial Item Development

A literature review was conducted to identify employers' concerns about hiring/employing people with disabilities and people with blindness or low vision. The results from a large, nationally representative survey of employer perspectives on employing people with disabilities were used as a foundation for item development (Domzal, Houtenville, & Sharma, 2008). Employers were asked to identify the greatest challenges to hiring people with disabilities, and the majority of these themes were utilized in item development. Additional sources for item development included three other studies conducted with employers, each of which identified employers' concerns about employees with disabilities or reasons for not hiring persons with disabilities (Johnson, Greenwood, & Schriener, 1998; Kay, Jans, & Jones, 2011;

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Wolffe & Candela, 2002). Wolffe and Candela (2002) specifically focused on employer perspectives regarding challenges to hiring persons with blindness or low vision.

Twenty-three initial items were generated based on the results of these studies conducted with employers. Two or more differently-worded items were created to represent many of the themes identified (e.g., employing someone who is blind or visually impaired would require extra work for co-workers or supervisors). These 23 items conceptually fell into two broad categories: (a) productivity or ability of blind/visually impaired people as employees and (b) challenges to employing blind/visually impaired people. Items were worded as statements to which the respondents were asked to express their level of agreement. Both positively and negatively worded items were included. A seven-point Likert scale was used, ranging from *Strongly Agree* to *Strongly Disagree*.

Expert Review of Items

Nine experts in the areas of (a) employment of persons with blindness or visual impairments, (b) measurement of attitudes, and (c) business management reviewed the initial attitude items, the introductory text, and the participant instructions. The experts were asked to provide feedback in terms of clarity and appropriateness of introductory language, clarity of items, appropriateness of items to measure employer attitudes, and comprehensiveness of items. Suggestions for additional items were solicited. Multiple changes to the introductory language and wording of items were made and four new items were added based on experts' feedback.

Pilot Test

A pilot test was conducted for the purpose of evaluating the instrument and reducing the number of items. The initial version of the instrument utilized in the pilot test included 27 attitude measurement items. Participation in the pilot test was solicited from a convenience

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sample of people in hiring positions known by the author and colleagues, by a request distributed via email to people in hiring positions on the author's university campus, and by phone calls to local businesses. Participants either completed the instrument by phone ($n=23$) or online ($n=62$), resulting in a total of 85 people employed in hiring positions that completed the instrument. Feedback regarding the items and instructions was obtained during the phone administrations, and a place for comments and suggestions was included in the online version. These comments were considered when revising the instrument.

Pilot test attitude data were analyzed using descriptive statistics (means, standard deviations, range), coefficient alpha, and item-total correlations (evaluated both with all items combined and with items separated into *productivity* and *challenges* factors) for the purpose of identifying items to retain on the instrument. Items with low standard deviations and/or low item-total correlations with other items on the scale were evaluated for deletion. Whether the idea expressed in the item was included in another item was also a consideration, and side-by-side comparisons on the psychometric properties of pairs of items meant to measure the same idea were conducted. Based on these analyses, 14 items were selected to be retained. Wording for two of the items was revised to be reflective of the respondents' workplace (rather than a statement about workplaces in general) and one new item was added that represented a potential positive impact of employing someone who is blind or visually impaired.

Revised Instrument

The revised instrument consisted of seven positively worded items and eight negatively worded attitude items. Of the 15 items, 9 were expected to load on the challenges factor, 5 on the productivity factor, and 1 was thought to potentially load on both factors. The instrument also included eight introductory items, which confirmed that the person is involved in hiring new

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employees and elicited information about the person's position, types of jobs he/she hires for, whether the person has ever communicated with their state VR agency that works with persons who are blind or visually impaired (specific name of agency was provided), and previous exposure to persons who are blind or visually impaired. Neither company name nor demographic data about the respondents (e.g., gender, age, race) was collected to help ensure anonymity. The term "people who are blind or significantly visually impaired" was used to describe the population of interest to the study in the introduction. The term "legally blind" was used for brevity, beginning with the attitude item section. The instrument took about 10 minutes to complete over the telephone.

Data Collection Procedure

Businesses in four states (Alabama, Montana, New Jersey, and Texas) were targeted for participation in the study. (These four states were selected based on their vocational rehabilitation (VR) agencies' reported involvement in business interactions, as this study is one component of a larger study investigating the effectiveness of VR agencies' business interaction practices.) Information about 700 randomly selected businesses in each of the four states was compiled by a survey research firm (total $N = 2,800$). The instrument was completed with the businesses by telephone in August and September of 2012. The calls were conducted by trained interviewers at the Survey Research Laboratory at the author's university. Of the 2,800 businesses identified: 160 completed the instrument (the targeted number), 847 were never called, 165 had disconnected numbers, 757 did not answer the phone, 286 people answered but refused to participate (due to either personal reasons or company policy), 42 people indicated that their hiring was done via temporary agencies or over the Internet, 123 indicated they would call back but did not, and 416 requested a call back but were not called because the number of

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targeted completed responses had been reached. The response rate for those businesses reached by phone was 18.5%.

In addition to these randomly selected businesses, names of 46 business partners of two of the state VR agencies were provided for participation in the survey. These business partners were reportedly informed of the study and agreed to have their names provided to us. At least eight attempts were made to reach these contacts by phone. Responses were obtained from 34 employers (32 by telephone, 2 online), for a response rate of 73.9%.

Results

Data were collected from 194 people in hiring positions; however, 36 people did not answer all 15 attitude items on the instrument, leaving a total of 158 responses available for use in psychometric analyses. The majority of these respondents described their job title as Manager (57.0%), followed by Human Resources Personnel (19.0%), Supervisor (8.2%), and Owner (8.2%). Some respondents (7.6%) reported that their job title did not fit into any of these categories. Respondents had been working in their current positions an average of 9.6 years ($SD=10.66$), with a wide range from 1 month to 50 years and a median of 6 years. Respondents were asked what types of positions they made hiring decisions for (open-ended response) and interviewers placed their responses in broad employment categories. The most common types of position respondents hired for were Customer Service ($n=61$), Office Work/Clerical ($n=50$), Sales/Marketing ($n=38$), and Management/Supervisory ($n=27$).

Reliability and Item Assessment

Item quality and scale reliability were initially assessed with coefficient alpha, item-total correlations, standard deviations, and item range of responses. All items were evaluated together and as two separate scales (based on whether they were associated with *productivity* of the

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person or *challenges* to employing a person who is blind or visually impaired). Two items clearly did not correlate with the other items on the scale or subscale (both were from the challenges scale). These two items were removed and coefficient alpha was evaluated again. The coefficient alpha estimate for the remaining 13 items combined was .87, .88 for the productivity subscale and .75 for the challenges subscale. Two items from the challenges subscale had relatively low item-total correlations (below .30), but were retained for the subsequent factor analysis.

Exploratory Factor Analysis

A common factor analysis procedure was conducted to evaluate the factor structure of the employer attitude instrument. Common factor analysis utilizes the shared, or common, variance among a group of variables to identify factors. An exploratory factor analysis was considered the most appropriate procedure at this early stage in the development of the instrument (Brown, 2006). To evaluate the appropriateness of the data to be used in a factor analysis, Kaiser's measure of sampling adequacy (MSA) was utilized. The overall MSA value obtained was .87, and individual item MSAs ranged from .78 to .93, which provides strong evidence for the appropriateness of the data for a factor analysis. An iterated principal factors method was used to extract the factors. Two factors were expected to emerge from the data, and two factors were supported by the scree plot and the proportion of variance explained by the eigenvalues. Because the factors were expected to be correlated, an oblique rotation was used to arrive at the final factor pattern.

An item was considered to load on a factor if its factor loading was .40 or higher and it did not load on the other factor (i.e., factor loading < .30). Ten of the thirteen items loaded as expected on the productivity or challenges factor; the one item thought to potentially load on both factors only loaded on the challenges factor. Two items (both expected to load on the

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challenges factor) did not load on either factor. (See Table 1 for complete results of the items' factor loadings.) The inter-factor correlation was .51. Communality estimates for the two items that did not load on either factor were very low. Based on the results of this initial factor analysis, those two items were removed from the scale and analyses were conducted again. All items loaded as expected on the reduced-item factor analysis, without cross-loadings, and the inter-factor correlation increased to .55. The coefficient alpha estimate for the challenges subscales remained the same with the two items removed. These results provided good initial evidence for the construct validity of the reduced instrument.

Revised Instrument

As a result of the psychometric analyses, four items were removed from the attitude measure, resulting in an 11-item instrument consisting of a 5-item productivity subscale and a 6-item challenges subscale. The productivity factor and the challenges factor are hypothesized to be components, or lower-order factors, of attitudes towards persons who are blind or visually impaired as employees, and therefore the scores on the subscales are combined for an overall attitude score. The potential range for the scale was 0 to 66, with higher scores indicating a more positive attitude towards persons who are blind or visually impaired as employees. The actual range of scores obtained on the scale was 6 to 65, and the mean was 34.45 (SD=14.12). The median was 35 and the distribution had two modes (27 and 43 [$n=7$ for each]), resulting in a distribution that was not skewed but was slightly flatter than a normal distribution (skewness = 0.02, kurtosis = -0.95).

Criterion Validity

An additional analysis with the overall scale score was conducted to provide evidence for the criterion validity of the instrument. First, participants with one or two missing items had their

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scores calculated by imputing the data with the mean value based on their other responses (individual mean score imputation). This increased the potential sample size to 185 for these analyses. An ANOVA was conducted with the independent variable being whether the person had ever hired someone who is blind or significantly visually impaired for his or her business (one of the introductory questions on the instrument). Four people indicated they did not know if they had ever hired someone who was blind or significantly visually impaired, and these responses were removed from the analysis. People who had hired someone in the past were predicted to have more positive attitudes towards persons who are blind or visually impaired as employees, and therefore should score higher on the scale. The results of the statistical analysis supported this hypothesis: $F(1,179)=38.60, p < .01, \eta^2=.18$. Employers who had not hired someone who is blind or visually impaired ($n = 141$) had mean scores of 30.98 (SD=13.37), while employers who had hired someone ($n = 40$) had mean scores of 45.25 (SD=10.66). The results indicate that 18% of the variance in attitudes is explained by whether an employer had hired someone who is blind or visually impaired in the past, which is considered a large effect. The results provide good initial evidence for the criterion validity of the instrument.

Discussion

The purpose of this study was to create an instrument to measure employers' attitudes towards persons who are blind or visually impaired as employees, which was not previously available. A formal instrument development procedure was followed in the creation of this measurement scale. Content validity of the scale is supported by the use of research with employers that documented their concerns about hiring and employing people with disabilities and people who are blind or visually impaired in creating the attitude items. Content validity of the scale is further supported by the use of an expert panel, consisting of representatives from

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multiple disciplines relevant to the research, who provided a review of the items and suggestions for changes. A pilot test of the initial version of the instrument was conducted with 85 employers, and the results from the psychometric analyses with the data, in addition to feedback from participants, were used to further refine the instrument. The revised version of the instrument was subjected to a psychometric analysis that provided evidence for its reliability, factor structure (supportive of the two hypothesized factors), and criterion validity. All of the statistical results are at an adequate level to support the initial reliability and validity of the instrument. The challenges subscale had an adequate, although lower, coefficient alpha estimate. This is hypothesized to be because the items comprising that scale are quite varied and include an employer's personal perceptions as well as items about others' reactions (co-workers, customers). Given the nature of the items, the coefficient alpha value of .75 is considered appropriate.

Although much has been written about negative employer attitudes being a barrier to employment for people who are blind or visually impaired, this is the first time that an actual measurement of employer attitudes towards this population as employees has been reported in the literature. The overall mean score of 34.45 corresponds approximately to the neutral point on the scale, and almost the entire range of possible scores was utilized. The distribution was not skewed, but had a negative kurtosis, which indicates that fewer extreme scores were present (than would be if the data were normally distributed). The results provide support for the fact that many employers do in fact have relatively negative attitudes towards persons who are blind or visually impaired as employees, but also demonstrate that many employers have relatively positive attitudes towards this population. Few employers expressed extremely negative or positive attitudes (6.5% were 1.5 standard deviations below the mean and 4.9% were 1.5

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standard deviations above the mean). Socially desirable responding (SDR) may have influenced these responses, although the results (i.e., large number scoring on the negative end of scale, lack of skewness) provide some support for the idea that the responses on the scale may not have been excessively influenced by SDR.

Potential Scale Utilization

There are a number of ways that the employer attitude measure presented in this paper may be utilized in practice. It is the only instrument currently available to measure employer attitudes towards persons who are blind or visually impaired as employees. The psychometric evidence available for its reliability and validity increase its utility. As mentioned previously, negative employer attitudes have consistently been cited as a major barrier to employment for this population, but actual measurement of these attitudes has not occurred. The ability to measure these attitudes is now possible with this scale. The scale can also be used to identify specific areas that employers are most concerned about in regards to employing people who are blind or visually impaired, by evaluating responses to individual items. Means on the individual items with this sample ranged from 2.30 to 4.03, indicating varying levels of concern about individual items, each of which represented a theme identified in prior research with employers. Additionally, this scale can be used as an outcome measure for interventions designed to have a positive effect on employer attitudes towards hiring persons who are blind or visually impaired. Given the evidence regarding negative employer attitudes towards this population as a barrier to employment, these types of intervention studies are greatly needed.

Limitations

Although the sample size was adequate for the analyses conducted, a larger sample size would have been preferable for increased power. The sample obtained from four states was

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appropriate for the purposes of evaluating the reliability and validity of the instrument, but a national sample would provide better support for the generalizability of the findings related to average employer attitudes. Although the survey response rate was within the average for these types of studies (Unger, 2002), the relatively low response presents a potential self-selection bias. Employers who elected to participate may be more interested in the topic or hold more positive views than the general population, potentially limiting generalizability of results. A limitation of a self-report attitude measure such as this is the possibility of SDR, which research has suggested is potentially a problem when discussing this population (Crandall et al., 2002). Although the results provide some support for the idea that this was not a large problem with the responses provided to this instrument, we cannot be sure of the actual effect SDR may have had on individuals' responses. Additional research on the scale would benefit from the use of a measure of SDR to evaluate the extent bias may be present. Evidence for reliability of the instrument in terms of internal consistency was provided, but evidence for consistency across time (i.e., test-retest) was not provided.

Future Research

The results of this study have provided initial evidence that the instrument created has an acceptable level of reliability and validity. These results should be considered preliminary and additional investigation is needed to provide further evidence of the instrument's reliability and validity. Ideally, this research would involve a larger, national sample of people in hiring positions from a variety of sizes and types of businesses. Confirmatory factor analysis with structural equation modeling would be the appropriate statistical technique to use with additional investigations (Brown, 2006). Four items were deleted from the scale based on the psychometric analyses. Two of these items clearly did not correlate with the others, but the remaining two

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should be retained in future versions of the scale to further evaluate their utility. Additionally, a few of the employer concern themes identified during the initial item development (i.e., not knowing how to handle needs of person with disability/lack of knowledge about disability and attitudes of co-workers) were not retained in the final set of items. In order to ensure a comprehensive instrument, new items to represent these themes may be included in additional studies to evaluate their appropriateness. Future research should also include additional analyses to document criterion validity of the instrument. Because of the enduring potential issue of SDR, the development of an implicit association test specific to attitudes towards persons who are blind or visually impaired may be beneficial to use in conjunction with an explicit attitude measure such as the self-report one described in this article (Greenwald, Uhlmann, Poehlman, & Banaji, 2009).

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Table 1

Factor Loadings for Exploratory Factor Analysis with Promax Rotation

Item Description ^a	Productivity	Challenges
Able to perform work of the same <u>quantity</u> as sighted people at my company	.98	-.17
Able to perform work of the same <u>quality</u> as sighted people at my company	.89	-.07
Too costly for my company	.29	.44
Able to successfully supervise others at my workplace	.48	.24
Lack of employee knowledge makes difficult to have a person who is legally blind work here	-.01	.72
Could motivate other employees	.31	.12
Would have a hard time doing the jobs we have here	.60	.23
Could provide service to our customers just as well as people who are sighted	.72	.15
Need to provide more help to a coworker who is legally blind ^b	.22	.46
Okay to use a guide dog in the workplace	.26	.11
Hard to justify hiring someone who is legally blind if other qualified applicants available	.20	.60
Customers might feel uncomfortable having a person who is legally blind help them	-.01	.49
Apprehensive about terminating someone who is legally blind due to potential legal issues	-.01	.43

Note: Factor loadings are highlighted under the factor they were *predicted* to load on and were obtained from a factor pattern matrix.

^a Exact item wording is available from the author upon request.

^b Item predicted to load on both factors.