

Brief Report

Assessing disability inclusion climate in the workplace: A brief report

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Abstract.

OBJECTIVE: The aim of this study was to evaluate the measurement structure of the *Abbreviated Disability Inclusion Scale*.

METHODS: Exploratory factor analysis results indicated a two-factor measurement structure (disability inclusion climate and disability inclusion preparedness).

CONCLUSION: Higher levels of disability inclusion were found to be associated with lower levels of employer stigma. The *Abbreviated Disability Inclusion Scale* can be used as part of an assessment battery in demand-side employment research for model testing, as well as an outcome measure in intervention research.

Keywords: Demand-side employment, disability inclusion and diversity, employer stigma

1. Introduction

People with disabilities represent one of the most marginalized groups in the United States (Livneh, Chan, & Kaya, 2014), and stereotypes, prejudice, and discrimination greatly constrict their opportunity for employment participation (Chan, Livneh, Pruett, Wang, & Zheng, 2009; Livneh et al., 2014). Specifically, the employment participation rate of 19.6% for people with disabilities is three times lower than the 66.0% participation rate of people without disabilities (U.S. Department of Labor, Bureau of Labor Statistics, 2017). Not surprisingly, the poverty rate for individuals with disabilities is also significantly

higher than for people without disabilities (28.5% vs. 12.3%, respectively) (Atkins & Giusti, 2005; Federal Safety Net, 2015). Collectively, unemployment, underemployment, poverty, and income inequality have a profound negative impact on people with disabilities' community integration and participation, upward mobility, and physical and mental health well-being (Chan, Iwanaga et al., 2017; Hall, Kurth, & Hunt, 2013; Muller et al., 2017).

With the passage of the Workforce Innovation and Opportunity Act (WIOA) and the amendments of the Rehabilitation Act in 2014, the Federal Government has demonstrated a strong commitment to address issues related to the hollowing out of the middle class (Chan, Tansey et al., 2017; U.S. Department of Education, 2014). State vocational rehabilitation agencies are mandated to increase their efforts in local job analysis, employer engagement,

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and customized training, and the National Institute on Disability, Independent Living and Rehabilitation Research (NIDILRR) has made demand-side employment research one of its highest research priorities. The current emphasis on employer practice related to recruiting, hiring, retaining, and promoting people with disabilities in the workplace reflects the limitation of supply-side employment interventions, such as providing job skills training and workplace socialization skills training as a strategy to help people with disabilities find good paying jobs with benefits and develop career pathways to the middle class. Although employers consistently expressed positive attitudes toward people with disabilities in disability employment research (Burke et al., 2013), there is strong evidence in the empirical literature to suggest that employers' positive attitudes do not always translate to actual hiring of people with disabilities. For example, an employer survey commissioned by the U.S. Department of Labor indicated that only 19% of companies reported employing people with disabilities (Domzal, Houtenville, & Sharma, 2008).

To optimize career development and job placement outcomes of people with disabilities, rehabilitation researchers are beginning to develop and validate demand-side employment interventions for people with disabilities. One of the promising demand-side employment practice is to work with employers to include disability in their diversity and inclusion policies and procedures (Chan et al., 2010). In a survey of human resources managers in the Midwest region of the United States, Chan and colleagues (2010) found that having a disability inclusion and diversity policy and knowledge of the Americans with Disabilities Act (ADA) and ADA job accommodations were the two most significant predictors of efforts to recruit, hire, retain, and promote people with disabilities in the workplace. These findings related to disability inclusion policy were also supported by Habeck, Hunt, Rachel, Kregel, and Chan (2010) in their study of employee retention and integrated disability management practices.

1.1. Purpose of the study

As demand-side employment researchers begin to develop and validate demand-side employment interventions to modify employers' misperceptions about people with disabilities in the workplace, there is a need for psychometrically sound outcome measures that can be used to evaluate the efficacy of

these interventions in changing employers' attitudes and their actual hiring and retention behaviors. Since employers are reluctant to complete lengthy research instruments, it is imperative that brief but psychometrically sound measures are available for demand-side employment research. The purpose of the current study was to validate the measurement structure and psychometric properties of the *Disability Inclusion Scale* using exploratory factor analysis (EFA).

2. Method

2.1. Participants

Data for the present study were extracted from the SPR/*nAblement* Employer Survey database. SPR Consulting is a digital transformation agency in Chicago. *nAblement* is a division of the SPR Consulting with a mission of providing job placement services for qualified people with disabilities in the information technology field.

A total of 138 human resources managers, department managers, and project managers in the Midwest region of the United States completed the SPR/*nAblement* Employer Survey online. The mean age of the participants was 45.34 years ($SD=9.08$). The majority of participants identified themselves as White (91%), and 62% were men. In terms of educational attainment, 9% had some college (no degree), 59% had a bachelor's degree, 24% had a master's degree, and 5% had a doctoral degree. More than half of the participants have family or friends with a disability (54%). In addition, the majority of the participants received diversity training (81%) and ADA training (54%). The participants were employed in the health-care industries (19%), finance (16%), information technology (15%), manufacturing (14%), other services (except public administration; 12%), and professional/technical (10%). The majority of participants were employed by companies with more than 500 employees (64%), followed by companies with employees between 15 and 100 (16%), companies between 101 and 500 employees (12%), and companies with less than 15 employees (7%).

2.2. Measures

2.2.1. Disability inclusion

The *SPR/nAblement Employer Survey* for this study was developed by SPR researchers from a

comprehensive review of the demand-side employment literature and six focus groups with employers in the greater Chicago and Milwaukee areas (Chan et al., 2010). Narrative data from the focus group studies were analyzed for major themes. These themes served as the test specifications for developing items for the employer survey. In the present study, data for disability inclusion items were extracted from the *SPR/nAblement Employer Survey* to develop and validate an abbreviated disability inclusion measure that can be used in demand-side employment research. The *Abbreviated Disability Inclusion Scale* is composed of six items (e.g., “our diversity and inclusion plan emphasizes hiring people with disabilities”). Each item is rated on a five-point Likert-type agreement scale rating from 1 (*strongly disagree*) to 5 (*strongly agree*). Psychometric properties of the *Abbreviated Disability Inclusion Scale* are reported in the results section.

2.2.2. Employer stigma

The *Employers’ Stigmatizing Attitudes toward People with Disabilities Scale* (Chan, 2018) was used to assess employer stigma. It is composed of five items and two subscales: (a) disability stigma – job performance, three items (e.g., “people with disabilities need more time to learn a task”) and (b) disability stigma – work relationship, two items (e.g., “co-workers are not very comfortable working with people with disabilities”). Each item is rated on a five-point Likert-type agreement scale rating from 1 (*strongly disagree*) to 5 (*strongly agree*). The internal consistency reliability coefficients (Cronbach’s alpha) for the performance subscale and the relationship subscale were computed to be 0.71 and 0.61, respectively.

2.3. Procedure

Human resources managers, department managers, and project managers were recruited by the managing director of the *nAblement* Division of SPR Consulting. Using the SPR database, business development managers in the Midwest region were asked to announce the SPR/*nAblement* survey research project to their human resources managers, department managers, and project managers in their companies and encourage them to participate. Participants completed the SPR survey online using the SurveyMonkey.com website.

2.4. Statistical analysis

Exploratory factor analysis, a common statistical technique for examining measurement structures of clinical assessment instruments, was used to evaluate the measurement structure of the *Abbreviated Disability Inclusion Scale* (Costello & Osborne, 2005; Floyd & Widaman, 1995).

3. Results

3.1. Exploratory factor analysis

The 6×6 correlation matrix of the *Abbreviated Disability Inclusion Scale* was subjected to a principal components analysis. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy of 0.77 was considered good (>0.70), and exceeded the recommended minimum value of 0.60 (Hutcheson & Sofroniou, 1999; Kaiser, 1974). The Barlett Test of Sphericity was significant ($\chi^2 [15, N = 138] = 202.66, p < 0.001$), indicating that correlations in the data set are appropriate for EFA. The Kaiser–Guttman’s “Eigenvalues greater than one” criterion was first used to determine the number of factors to be retained, followed by Cattell’s Scree test (Costello & Osborne, 2005; Nunnally & Bernstein, 1994). Analysis of the eigenvalues indicated a two-factor measurement structure, and an inspection of the scree plot indicated a one-factor measurement structure for the disability inclusion scale. According to Floyd and Widaman (1995), in EFA, researchers should consider letting the factors correlate in the rotation procedure as “the oblique simple structure may be more compelling than the orthogonal solution for the data” (p. 292). Therefore, oblique rotation was used to rotate the two-factor solution to simple structure to enhance interpretation of the factors. The variance accounted for by the two factors was 63.49%. All items loaded significantly onto their respective factors (ranging from 0.50 to 0.74). Items with factor loadings greater than 0.40 in one factor and less than 0.30 in other factors were retained. Means, standard deviations, factor loadings communality (h^2), eigenvalues, percentage of variance explained, and reliability coefficients for the *Abbreviated Disability Inclusion Scale* are presented in Table 1.

As can be observed, these two factors were parsimonious, interpretable, and meaningful and were labeled as follows:

Table 1
Explanatory factor analysis using principal component analysis
with oblique rotation

Items	Factor 1	Factor 2	Mean (SD)	h^2
Disability awareness and sensitivity training is part of our company's diversity training	0.87	-0.03	2.97 (1.04)	0.74
Employees in our company are trained in diversity management related to disability.	0.82	-0.07	2.89 (1.29)	0.63
Our company has individuals with ADA and job accommodation expertise.	0.67	0.20	3.35 (0.92)	0.60
Our diversity and inclusion plan emphasizes hiring people with disabilities.	0.07	0.80	3.76 (0.74)	0.69
We believe that hiring people with disabilities enriches the diversity climate of our company.	0.12	0.75	3.47 (0.90)	0.66
The organization culture of our company is positive and supportive of employing people with disabilities.	-0.10	0.74	2.73 (0.80)	0.50
Eigenvalues	2.79	1.02		
Variance (%)	46.51	16.97		
Cumulative % Variance	46.51	63.49		
Reliability (Cronbach's Alpha)	0.72	0.67		

3.1.1. Factor 1 – disability inclusion preparedness

This factor comprises three items representing the company's preparedness for disability inclusion in the workplace including diversity training and ADA job accommodations (e.g., "Disability awareness and sensitivity training is part of our company's diversity training"). All three items loaded highly onto this factor (factor loadings ranging from 0.67 to 0.87), accounting for 46.51% of the total variance. The internal consistency reliability coefficient (Cronbach's alpha) for this subscale was estimated at 0.72, indicating acceptable reliability of the items constituting this factor. The mean rating for this factor was 3.07 ($SD = 0.87$).

3.1.2. Factor 2 – disability inclusion climate

This factor also comprises three items representing positive and supportive organizational climate for employing people with disabilities (e.g., "Our diversity and inclusion plan emphasizes hiring people with disabilities"). All items of this factor

loaded significantly onto this factor (ranging from 0.74 to 0.80), accounting for 16.97% of the total variance. Cronbach's alpha was estimated at 0.67, indicating acceptable reliability for a two-item subscale. The mean score for this factor was 3.32 ($SD = 0.64$).

3.2. External correlates

A correlational analysis was conducted to examine the relationship of the two disability inclusion factors with a measure of disability stigma in the workplace. Disability inclusion climate was significantly related to disability inclusion preparedness ($r = 0.53, p < 0.01$). Both disability inclusion climate and disability inclusion preparedness were inversely associated with disability stigma-work relationship ($r = -0.31, p < 0.01$; $r = -0.19, p < 0.05$) in the expected directions.

4. Discussion

Gainful employment has significant positive benefits on the health and well-being of people with disabilities (Hall et al., 2013; Muller et al., 2017). However, the employment rate of people with disabilities remains notoriously low (U.S. Department of Labor, Bureau of Labor Statistics, 2017) and poverty rate high (Federal Safety Net, 2015) compared to those without disabilities. Traditionally, state vocational rehabilitation agencies have been using the supply-side employment approach to help people with disabilities develop social functioning and job skills needed for competitive employment (Chan, Strauser, Gervey et al., 2010; Chan, Strauser, Maher et al., 2010). However, the supply-side employment approach ignores variables related to employer demand (and the interaction of employer demand and the work environment) as predictors of hiring, retention, and career development outcomes of people with disabilities in the workplace (Chan, Strauser, Gervey et al., 2010; Chan, Strauser, Maher et al., 2010). As a result, disability employment researchers have been conducting demand-side studies to validate best employer practices related to recruiting, hiring, retaining, and promoting of people with disabilities in the workplace.

As demand-side employment researchers begin to design disability inclusion and employment interventions, there is a strong need to develop and validate measures to assess the disability inclusion climate

and preparedness of companies before and after the implementation of demand-side employment interventions. Many employers may not understand the health and psychosocial aspects of disability; therefore, disability training can provide employers information that can reduce their fears and concerns about hiring people with disabilities (Brostrand, 2006). One major goal of diversity and inclusion training is to facilitate positive interactions between employees from the majority background with employees from diverse backgrounds, so that they can work effectively together, which can further promote company and individual success (Bezrukova, Jehn, & Spell, 2012). In the U.S., about 67% organizations report the use of diversity training as in-service training for employees (Kalinowski et al., 2013; Kulik & Roberson, 2008; Phillips, Deiches, Morrison, Chan, & Bezyak, 2016). However, the major focus of general diversity training has been on gender, sexual orientation, race and ethnicity, and there has been less attention on disability within the context of diversity training (Phillips et al., 2016). This omission of people with disabilities suggests that more interventions are needed for companies to promote disability recruitment and retention practices.

In this study, the *Abbreviated Disability Inclusion Scale* was validated as a brief assessment of disability inclusion practice in the workplace for use as part of a demand-side employment assessment battery. Exploratory factor analysis results indicated a two-factor measurement structure. Each factor was significantly associated with lower levels of stigmatizing attitudes toward people with disabilities in the workplace, suggesting that both companies' and employees' preparedness for disability inclusion in the workplace, along with company's positive and supportive disability inclusion climate, impact the employment outcomes of people with disabilities. Specifically, disability inclusion climate for employing people with disabilities is related to disability inclusion preparedness, including disability inclusion training and ADA job accommodations. Importantly, higher disability inclusion preparedness was related to lower level of stigmatizing attitudes toward people with disabilities in the workplace.

4.1. Implications

The *Abbreviated Disability Inclusion Scale* can be utilized as a demand-side employment tool to assess

a company's disability inclusion practice through disability inclusion preparedness and disability inclusion climate. Interventions can be implemented to increase business organizations' awareness and practices for disability inclusion. For instance, preparedness can be achieved by providing training for designated employees in the organization to develop expertise in ADA regulations and ADA job accommodations. Further, disability-centered diversity and inclusion training, including disability awareness and sensitivity training, can be offered to employers and employees to promote positive organizational climate that are favorable for hiring and retaining people with disabilities in the workplace. In addition, the *Abbreviated Disability Inclusion Scale* can be used for model testing as well as an outcome measure in demand-side intervention research to evaluate the efficacy of disability employment interventions in changing employers' attitudes, hiring, and retention behaviors.

4.2. Limitations

The main limitation of this study was that a convenience sample of human resources managers and department/project managers was used which may limit generalizability. Further, although the internal consistency reliability of the two disability inclusion subscales are within the acceptable range for very brief measures, additional items should be considered in future research to increase the reliability and validity of the *Abbreviated Disability Inclusion Scale* as outcome measures to assess pre-intervention and post-intervention disability inclusion climate of companies.

4.3. Conclusion

This study validated the *Abbreviated Disability Inclusion Scale* as a psychometrically sound, abbreviated assessment of disability inclusion practice in work settings. Exploratory factor analysis results indicated a two-factor measurement structure. Both disability inclusion preparedness and disability inclusion climate were found to be significantly associated with lower levels of employers' stigmatizing attitudes toward people with disabilities in the workplace. This measure can be incorporated into an assessment battery in demand-side employment research for model testing and as an outcome measure in demand-side intervention research.

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Conflict of interest

None to report.

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