



Developing a Multilevel Scale to Assess Retention of Workers with Disabilities

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Accepted: 30 April 2021 / Published online: 9 June 2021

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Abstract

Purpose Persons with disabilities (PwD) face difficulties in employment. Despite extensive research on PwD in the workplace, there is lack of research on the factors behind retaining or terminating the job of a PwD. This study aims to address this gap by developing the Retaining Workers with Disability (RWD) model. **Method** Predicated on 1032 respondents with employment decision authority, we performed exploratory factor analysis (EFA) followed by confirmatory factor analysis (CFA) for convergent and discriminant validity of the RWD model. Next, we developed the two-rank model RWD-II and employed CFA for validation. **Results** We presented a dual-facet measurement tool for assessing employer attitudes towards retaining PwD in the workplace. Two dominant factors were measured, direct and indirect work-related items. Indices for both models (one and two-rank) showed a good fit. **Conclusion** Our study highlighted two major factors influencing managers in the decision-making process of retaining workers with disabilities as follows: direct and indirect work-related concerns. The measure was validated using the RWD scale. By providing the tool to identify attitudes towards PwD work retention, we offer the first step in identifying and changing a negative approach toward this population in the workplace. Practical contributions are discussed.

Keywords Employment · Covid-19 · Rehabilitation · Weights and measures · Disability

Introduction

Ever since legislation was passed to promote the rights and status of Persons with Disabilities (PwD) within the public sector [1], there has been widespread hope that the law will lead to the full integration of PwD in the labour market. However, the employment rate of PwD has continued to be lower than that of workers without disabilities [2, 3]. Even when employed, many are underemployed, working

part-time, or underpaid [4]. Ample research has been done on employment of PwD [5, 6], however there is limited research on PwD job retention [7]. Furthermore, there is lack of accurate and validated surveys that explore employers' attitudes towards retaining PwDs in the workplace. The first purpose of this study is to address this literature gap by providing a multilevel measure to assess employers' attitude towards retention. Another goal is to provide a usable scale for human resources (HR) to assess real-time managerial attitudes and decisions.

This article addresses the issue of retaining PwD in the workplace, a topic of critical importance, especially in turbulent economic times, such as that of the COVID-19 pandemic [8] that has had a greater negative impact on socially disadvantaged populations [9]. The 'legitimacy' to express a negative attitude towards PwDs increases the credibility of the sample which thus might be used as a method to explore managerial attitudes in ordinary as well as challenging times.

Employers' reasons for not retaining PwD in the workforce fall into the following two categories: direct and indirect work-related factors.

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Direct Work-Related Factors

Direct factors relate to the issues directly impacting the employer and the immediate work environment. These include difficulties in handling a PwD during a worldwide health crisis; concerns about increased insurance costs [10–12]; costly accommodations and modifications of the physical environment, such as removing doors or enlarging parking spaces [13]; changing how work is performed, such as in supplying assistive technologies; and adjustments to the work schedule to allow the PwD to perform optimal work [10]

Regarding job performance, managers fear that PwD need more time to learn and complete tasks at work [14], lack the qualities, qualifications, and functions required for the job [10, 15], or do not meet the same performance standards of workers without disabilities [15] both in terms of performing physical tasks [16] and in skill [16], causing them to be highly dependent [17]. Managers also fear that PwD are more likely to have higher absentee rates than colleagues due to health issues [18].

Indirect Work-Related Factors

Indirect factors relate to the issues having an indirect influence on the employer's choice for not retaining PwD in the workplace, and usually have to do with attitudes regarding the impact on the work environment. Some managers believe the worker will become less dependable, problematic, or will create tension within the workplace and among co-workers [19]. Regarding social integration, some employers express concern that the PwD will be unable to fit in socially and connect with co-workers [10]. Managers state that PwD disrupt the workplace morale [20] teamwork, and express concerns about the co-workers treating PwD accommodations as preferential and unjust. Managers also fear that other workers will attribute any hard work to compensating for the low productivity and the inability of the PwD to complete required tasks [21].

Managers express concerns about legal liabilities, disciplinary action, and termination of PwD workers [22]. Hiring PwD puts employers at a risk for legal action due to a deteriorating medical situation [10]. Since many employers regard the employment of PwD as an act of charity or kindness rather than an economic step [23], they may feel this "burden" is unnecessary.

Implications of Economic Recession

The problem of not retaining PwD within the workplace is even more pronounced during a health and economic crisis

[24]. The COVID-19 pandemic wreaked havoc around the world and has triggered an immense crisis in the worldwide economy and labour market [22]. Economic downsizings are taking place across all sectors [25]. The extended global lockdown and quarantine have left employees in various sectors vulnerable to massive layoffs, salary cuts, and indefinite unpaid leaves [26]. Many organizations enforce compulsory leave [27]. The first people to be terminated from work are those with disabilities [28]. In times of crisis, the disabled are most likely to lose their jobs and face challenges finding reemployment [24]. Another challenge resulting from the health crisis is that employers are hesitant about the costs involved to adapt the workplace to fit occupational, safety, and health standards required by PwD, inherently considered at a higher risk [27, 29]. There are more health complications and challenges to consider. For example, due to legitimate health reasons, the disabled employee may not have the ability to wear a face mask. A person with a hearing problem may have trouble reading lips because of face masks. People with physical handicaps may not be able to maintain basic hygiene (such as handwashing) and physical distancing (i.e., people who need physical support).

International Classification of Functioning, Disability, and Health Model

One model that offers a systematic approach for understanding and assessing health and disability is the World Health Organization's International Classification of Functioning, Disability, and Health [30]. In this model, individuals are treated as a synthesis of biological, psychological, social, and environmental factors [30]. Therefore, a person can be integrated into life situations only when medical and contextual factors are taken into account. These include individual characteristics (e.g., age, gender, personality, body functions and structure, beliefs, education, skills, and abilities), and physical and social environmental factors (e.g., access to key locations within the community, family, school, work) that have a positive or negative impact on daily life [31, 32]. Work participation is one example of an environmental factor that affects human functioning [33]. Employment is fundamental to the well-being of a person, especially for those with a disability [34]. Participation in the workforce and community life helps the PwD become active and remain independent. These activities may improve body function as the PwD has to find ways to bypass his difficulties and integrate into the environment [34]. As a result, his or her self-confidence and self-esteem increase, and a better quality of life is obtained [30] leading to better job performance and stability [35, 36]. However, concerns remain about the ability of PwD to perform different tasks at work (i.e., direct work-related factors), as well as about their ability to socially integrate into the organization (i.e., indirect work-related

factors). Therefore, workers with disabilities are the last hired and first fired [28].

The Model of Organizational Inclusion

The division between direct and indirect factors is also supported by the model of Organizational Inclusion [37]. In this model, the following two obstacles hinder the inclusion of PwD in the labour market: (1) the personal dimension, personal norms and values (i.e. indirect work-related factors); and (2) the organizational environment, such as policies, procedures, and organizational rewards for including workers with disabilities (i.e., direct work-related factors). Both factors determine individual behavior, codes of conduct, and level of inclusion/exclusion within the organization [37]. Employers express concern about PwD not being able to adhere to the organizational and behavioural culture of the organization. This attitude perpetuates an inability for PwD to integrate and socialize with co-workers (indirect reasons for exclusion) [38]. Since personal norms are based on self-concept and cultural perception [39], the inclusion of PwD and their retention in the workplace is based on how society within the organization views this inclusion [40]. Employers who adhere to factors such as cultural diversity and equality in their business model usually focus on worker capability rather than impairment, with or without disability [41].

The Social Cognitive Career Theory

The Social Cognitive Career Theory (SCCT) [38, 39] is significant in advancing our understanding of career development for PwD. This theory is based on Bandura's [42] General Social Cognitive Theory, describing the interplay of a person's experience, the conduct of others, and environmental factors on healthy behaviour. SCCT recognizes environmental and personal influences as factors that can either enhance or hinder "personal agency" [42], the capacity for individual choice and independence, critical factors in establishing a stable and successful career. The following factors are determined to be crucial for career development: self-efficacy beliefs, outcome expectations, personal goals, environmental support, and barriers [43]. Self-efficacy, a person's judgment of his/her ability to perform a certain task or course of action, was found to be the most significant in the disability literature [44, 45]. Since individuals with disabilities are less likely to be exposed to information provided by sources of self-efficacy and they receive less support from others for their career development, they are more likely to encounter barriers [43]. Individuals with disabilities were found to have lower levels of self-efficacy in career decision-making than their non-disabled counterparts [46], which results in lower performance and stability at work. This theory corroborates our results by strengthening

employers' direct concerns about hiring and retaining PwD in the workplace, as evident by the high mean of employers' direct concerns regarding retaining employees with disabilities.

When PwD are confronted with tasks at work that require their agency, their self-efficacy will have a direct influence on their direct work-related matters such as the ability to perform the tasks and the level of performance. Managers fear that the low self-efficacy of the worker will cause the latter not to perform as well as his/her coworkers, providing excuses such as a need to modify the workplace. The employer starts to doubt his/her own ability to handle the needs of the worker, the need for accommodations required for retaining the worker, and, above all, the need for higher costs attached to hiring a PwD such as insurance premiums and accommodation costs. Therefore, one way to increase the probability of retention in the workplace is to invest in the self-efficacy of PwD, which will have a direct influence on their career development.

Measurements

Several qualitative studies measured employer concerns towards retaining PwD in the workplace [47]. Other studies measured differences in the responses to concerns of employers toward the retaining of PwD in the workforce [22, 48]. However, few studies attempted to develop an effective and valid employer questionnaire targeted at PwD retention in the workplace [49]. First, the authors did not perform construct validation for the measure presented. A measure should be validated to ensure the ability of an instrument to measure what it was intended to measure [50]. Second, the exploration process, using exploratory factor analysis (EFA) was weak. It included the following three factors: (1) "Work ethic, general evaluation, and employment risk" (F1); (2) "Work performance and accommodation costs" (F2); and (3) "Negative stereotype" (F3). Two of these factors have an undefined and vague structure (F1 and F3). Some items in F1 and F3 (i.e., absent less often and quit job sooner, respectively) relate to work performance and thus should have been removed [51]. Other factors, such as "making others uncomfortable" and "harder to adopt new methods," do not comprise the components of each factor as was stated. Paez [52] and Sharma et al. [53], extended Chi and Qu's [49] questionnaire. Similarly to Chi and Qu [49], they, too, did not perform construct validity of their scale. In addition, Sharma et al., [53] did not present the final items to enable the EFA verification for their extension.

In our study, we present the Retaining Workers with Disability (RWD) model. In addition to the validation of the measurement, we also develop a hierarchical two-ranks model for measuring employer attitudes toward retention of workers with disabilities. This two-ranks model strengthens

the construct validity of the measure and underlines its theoretical assumptions. The measurement could be useful for practitioners and academic researchers. Investigating the reasons underlying the employer's negative approach towards retention of workers with disabilities will highlight the importance of providing solutions to resolve this predicament in the job market.

Methodology

Survey

Kaye et al. [54] proposed 12 main reasons for employers not retaining workers with disabilities (Appendix). They surveyed human resource professionals and supervisors working for employers resistant to complying with the Americans with Disabilities Act's employment provisions. They were asked to assess the reasons employers gave for not hiring or retaining workers with disabilities. We developed a survey from these responses, with each one including a Likert scale from 1 (strongly disagree) to 5 (strongly agree). Item 8 was refined to reflect people with current disabilities.

The survey was distributed using Online Panel Data, which is a fruitful platform for field testing as it supports the development of a variety of measures [55]. A screening question was used to determine whether the respondents have employment decision authority. Those who did were invited to complete the survey. The survey was conducted in July 2020 after the outbreak of the COVID-19 epidemic.

Sample

One thousand and thirty-two employers agreed to complete the questionnaire and take part in the study. Of these, 57.3% (591) were female and 42.7% (441) were male. The age range varied as follows: 32.5% (31) were between 25 and 35 years, 39.4% (407) were between 36–45 years, and 28.1% (290) were between 46 and 65. The education ranged from high school education (14.6% (151)) to professional diploma (19.2% (198)), and academic education (66.1% (683)).

Procedure and Analysis

This study set is meant to offer a tool to assess and predict managers' attitudes relating to PwDs. We performed the following steps. First, EFA was performed to explore the RWD dimensions. Next, we performed a confirmatory factor analysis (CFA) for convergent and discriminant validity [48]. After the one-rank model validation (RWD-I), we developed the two-ranks hierarchical model (RWD-II) and again performed CFA using comparative fit index (CFI), Tucker-Lewis Index (TLI), Root Mean Square Error of

Approximation (RMSEA), Normed-Fit Index (NFI)[56]. Values of CFI, NFI, and TLI of > 0.9 and RMSEA of < 0.08 are considered to represent good fit [57]. We used SPSS v.26 for EFA and AMOS v.26 for CFA.

Results

EFA

The Kaiser–Meyer–Olkin measure of sampling adequacy was 0.85, above the recommended value of 0.6 [58], and the Bartlett's test of sphericity was significant ($\chi^2(45) = 3112.26, p < 0.001$). Item Q7 was removed since it did not load on the intended construct [51]. Item Q4 was removed because it performed cross-loadings, which should always be removed [59].

The loadings were all ≥ 0.55 (Table 1), which is above the minimum of 0.3 [60]. Given these indicators, factor analysis was deemed suitable. A principle-components factor analysis was conducted of the 10 items using varimax rotations. Eigenvalues showed that the variables load onto the following two factors: direct work-related issues (*DIRECT*), and personal and social issues, which may affect the work indirectly (*INDIRECT*), explaining 53.76% of the variance. The factor-loading matrix is presented in Table 1.

Cronbach's alpha examined internal consistency for the scales, showing adequate alphas of 0.79 for *DIRECT*, 0.75 for *INDIRECT*, and 0.82 for the total scale.

CFA for RWD-I

CFA was performed for the convergent and discriminant validity of the single level scale RWD-I. Three items (Q11, Q12, Q6) were removed due to low factor loadings [61]. After removals, the constructs maintained the optimal number of items for solid constructs, between a minimum of three [62] and a maximum of five [63], i.e., three items for *INDIRECT* and four for *DIRECT*.

Table 1 Factor loadings for 10 items

	<i>DIRECT</i>	<i>INDIRECT</i>
Q2	0.80	
Q3	0.79	
Q1	0.71	
Q5	0.66	
Q6	0.64	
Q11		0.76
Q10		0.75
Q9		0.71
Q8		0.61
Q12		0.59

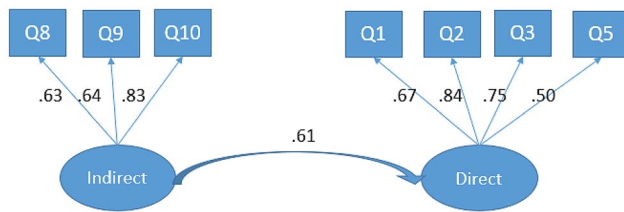


Fig. 1 RWD-I model loadings and standardized coefficients

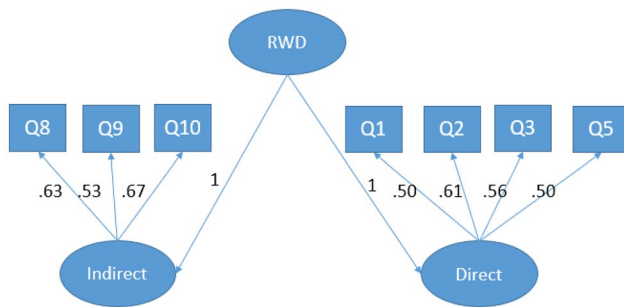


Fig. 2 RWD-II model loadings and standardized coefficients

To avoid possible problems due to multicollinearity, we examined item correlations. None of the correlation coefficients exceeded 0.61; therefore, multicollinearity was not considered a problem in this study. CFA showed a good fit to the observed data. CFI = 0.97, TLI = 0.95, NFI = 0.96, RMSEA = 0.075. Model loadings and standardized coefficients are presented in Fig. 1. All relationships are significant at $p < 0.001$.

CFA for RWD-II

The development of the multilevel scale consists of adding a latent variable in another rank, holding the two factors in the first rank. Correlations between errors were placed to improve model fit [64] and reliability of the latent constructs [65].

CFA was then performed for the convergent and discriminant validity of the multilevel scale, RWD-II. CFA showed a good fit to the observed data. CFI = 0.99, TLI = 0.96, NFI = 0.98, RMSEA = 0.07. Model loadings and standardized coefficients are presented in Fig. 2. All loadings are significant at $p < 0.001$, except for the correlations between Q8 and Q10, which are significant at $p < 0.05$.

Finally, the mean of the employers' direct work-related concerns construct was 3.87 (SD = 0.79), and the indirect mean work-related concerns construct was 2.85 (SD = 0.95).

Discussion

This study presents a measurement tool for assessing employer attitudes on retaining PwD in the workplace. The measuring tool is composed of two dominant factors, direct and indirect work-related items. We also developed a two-dimensional model comprising these factors.

The results coincide with Hershenson's theory of work adjustment [66–68], which states that certain skills, behavioral expectations, rewards, and opportunities must be met in individuals with disabilities for them to retain their job [66–68]. Behavioural expectations, direct work-related factors, consist of employer expectations, such as punctuality and effective communication with customers. Employers may fear that workers with disabilities will not be punctual and will be unable to live up to customers' needs and expectations. Skill requirements, direct work-related factors, consist of the skills required to perform basic tasks at work, such as computer and machine operating skills [69]. Employers express concerns about a disabled worker's inability to perform basic and advanced tasks at work, thus requiring more help from co-workers and more accommodations. Finally, rewards and opportunities include financial benefits, social networking, or status [66], i.e., indirect work-related factors. Managers fear that the worker will not be able to fully integrate into the organization, therefore negatively impacting the work atmosphere and the cordial relationships within the organization.

The scale we have presented is short enough to be efficiently employed by HRs, to identify managerial tendencies in integrating and retaining PwD in the workplace. Since scarcity of knowledge is a factor in the negative attitude towards PwD employment [70], HRs may also use this tool to develop workshops that teach about disabilities and ways to cope with them. The use of this tool might have a positive impact on eradicating the negative attitude towards PwD in the workplace and might be used to eliminate unconscious prejudice and biases.

The study indicates that employers' concerns are divided into direct and indirect factors. Direct factors relate to the issues directly influencing the work performance and economic yield of the workers in the organization. Indirect factors include the aspects indirectly influencing the social integration of workers within the organization. The ability of HR to recognize the type of concern the employer has will enable designing support measures, educational programs and training workshops that will cater for that specific need. For example, one of the most difficult problem in the employment of PwDs revolves around the employer's lack of knowledge regarding the PwD's actual work performance, productivity

standards, and the required job accommodations to fit his/her needs [71] (i.e. direct concerns). HR will identify the specific concern, provide the worker with vocational services, and develop the training accordingly. For instance, training and knowledge on the job accommodations and the inclusion of PwD were found to be significant factors in organizational diversity [72]. If a problem arises regarding the social integration of the PwD in the workplace (indirect concern), HR might design support measures for the worker and develop an education program and workshops on diversity and inclusion of PwDs within the organization. Our model allows a simple identification of the indirect concerns such as problems regarding diversity and the social integration of the PwD. In fact, Ang [73] claims that diversity within the organization improves the corporate social responsibility performance and fosters employee morale.

This study offers several contributions. First, research studies are published without proper validation, weakening the value of academic research [74]. This study provides a strong validating and presents the RWD model using both CFA and Multilevel CFA (MCFA) validated models. CFA is powerful because it provides explicit hypothesis testing for factor analytic problems [44]. MCFA extends the power of CFA to accommodate the complex survey data with the estimation of the level-specific variance components and the respective measurement models [75]. Multilevel models are flexible, powerful [45], highly advantageous [76], and have been applied to a range of studies in many practices, such as psychology, education, sociology, epidemiology, and public health [77]. However, no study in the field of disabilities has yet presented a multilevel scale. Multilevel models are more accurate and comprehensive than conventional models [78].

Second, we underline two major factors that influence managers in the decision-making process of retaining workers with disabilities, which may serve the human resources function in the organization. Furthermore, as people often have difficulty even identifying a particular situation [79], it may be possible that individuals are unaware of detrimental approaches that negate the employment of PwD. By providing the tool to identify the problem, this study offers the first step to amend a negative approach [80].

Third, scales are often based on self-report responses and are therefore undermining the credibility of the research [81]. However, This is the first study to review a sample of managers who decide on the retention of employees amid the COVID-19 period. This period extremizes, and unfortunately legitimizes, the negative attitudes towards retaining employees with disabilities, as businesses are struggling to survive, laying off employees [82]. Responses to the survey are more sincere than ever, which significantly improves the scale's credibility. The

respondents do not need to imagine or give a commonly accepted answer, they can express their actual reality.

Fourth, the analysis was conducted on a large sample of managers after the outbreak of the COVID-19 epidemic. The global health crisis and the aftermath of economic downsizing have led to decreased productivity and difficulty in retaining even experienced workers [26]. In a time like this, negative attitudes towards retaining PwD will be more pronounced and will reflect more extreme but genuine approaches towards retaining PwD in the workplace. This study is the first to conduct such an investigation during the spread of the COVID-19 epidemic.

Limitations and Future Studies

The measurement tool presented in this study is designed to assess employer attitudes towards retaining PwD. We did not investigate possible attitude differences that may arise from unique disabilities, to allow generalization [83] to occur. In addition to being a required process in social science research, generalization allows the adoption of the same system in specific cases [84] thus increasing the usefulness of this study. Future studies may extend this research by investigating specific disabilities. For example, Fuqua, Rathbun and Gade's [85] investigated current employer attitudes toward the work traits of eight types of disabled workers. Future studies may examine the presented model of the eight types found in Fuqua, Rathbun and Gade's [85] study. This examination should be naturally complemented with other validation and reliability techniques. Another limitation of this study is not taking into consideration the different types of work environments that institute different norms and conduct. Future studies can test the suggested model in other types of workplaces. Additional future study could extend the results of this study by presenting qualitative opinions of managers towards retaining PwDs in the workplace through the use of interviews.

Aligning the personal values of workers with the organization's values is foundational to sustaining a stable work culture [86]. When managers in an organization adhere to values of cultural diversity and the inclusion of PwD, policies and decision-making within the organization will follow these values [87]. As managers become more aware of the positive effect PwD have on the work environment [88], including the fact that PwD are loyal and highly motivated workers [89], they are more likely to hire employees with disabilities in the future [90]. Integrating PwD will not only improve their well-being [89] but will also contribute to the organization's cultural diversity and improve the attitudes towards PwD and their full integration in society.

Appendix

Proposed reasons for employers not retaining workers with disabilities [54].

1	They do not know how to handle the needs of a worker with a disability on the job
2	They are afraid that workers who develop disabilities will become a liability to them
3	They are worried about the cost of providing reasonable accommodations so that workers with disabilities can do their jobs
4	They think that workers who are poor performers only get worse once they acquire a disability
5	They are worried about other costs, such as increased health insurance premiums
6	They cannot ask about a worker's disability, making it hard to assess whether the person can still do the job
7	They believe that workers who develop disabilities can no longer do the basic functions of their jobs
8	They believe that workers with disabilities are less dependable
9	They are concerned about attitudes of co-workers toward the worker with a disability
10	They think of workers with disabilities as "problem employees"
11	They believe that workers with disabilities become less dedicated to their jobs
12	Workers who develop disabilities prefer not to return to work

Authors' contributions MK: Writing, Visualization, Conceptualization, Funding acquisition. EE: Writing, Conceptualization, Methodology, Validation, Visualization, Supervision, Formal analysis and investigation, Data Curation, Resources, Project administration, Funding acquisition. RN: Writing, Visualization, Conceptualization.

Funding This work was supported by the Israel National Insurance Institute.

Declarations

Conflict of interest No potential conflict of interest was reported by the authors.

Ethical approval The ethics committee of Ariel University, Israel, reviewed the study and granted ethical clearance.

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