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The psychometric evaluation of decent work in India

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Dedication

"I stand on the sacrifices of a million women before me thinking: *what can I do* to make this mountain taller so the women after me can see further."

-Rupi Kaur

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Abstract

Work has a high impact on an individual's well-being, health, and the lives of their loved ones who depend on them (Ford et al., 2013). The Decent Work Scale, constructed by Duffy et. al. (2017), measures what it means to have access to decent work (safe conditions, time for leisure and rest, support for family and social values, adequate compensation, and access to adequate health care) in the United States. However, a gap in the social sciences is the lack of external validity. Psychological research has mainly focused its attention on western, educated, industrialized, rich, and democratic nations and then generalized to other nations (Henrich, et. al., 2010). The purpose of this study was to extend the research on the Psychology of Working Theory (PWT; Duffy et al., 2016) through psychometric evaluation of the Decent Work Scale (DWS; Duffy et al., 2017) within the context of English-speaking Indian workers. Indian workers (N = 311) were recruited via Amazon Mechanical Turk (MTurk) for this study. It was hypothesized that similar to Duffy et al., (2017) the Indian sample will fit a bifactor model where items correspond to a single common factor (decent work) while also controlling for the multidimensionality of the five components. After conducting a confirmatory factor analysis, results indicated that factor loadings were sometimes low and sometimes with the opposite magnitude. The source of the problem appeared to be four reverse-scored items. A post-hoc analysis was conducted where the reverse-scored items were removed. The confirmatory factor models all showed acceptable fit, all factor loadings began performed in the proper direction, and the results supported the anticipated five-factor model. Furthermore, the exploratory factor analysis indicated five interpretable factors similar to Duffy (2017). The reliability of the total and subscale scores of decent work was significant and positive. The scores for validity, however, did not go in the direction we hypothesized them go to. Reasons why the Indian sample

may have provided different results compared to the United States sample are explored. This includes reverse-scored items, the need for translation, and using MTurk as a sampling method. The results of this study yield future research considerations.

Keywords: decent work, psychology of working theory, psychometric evaluation, India

CHAPTER I

Introduction

On average, people spend over 90,000 hours, or one-third of their lives working (Gettysburg College, 2021). Work has a high impact on an individual's well-being, health, and the lives of their loved ones who depend on them (Ford et al., 2013). Moreover, work is a complex system. Numerous moving parts of an organization including leadership, structure, people, and culture affect employees' job satisfaction, decision-making, attitudes, and behaviors.

A framework that specifically focuses on fulfilling human beings' basic needs in the workplace is referred to as the Psychology of Working Theory. The Psychology of Working theory proposes that when people have access to safe conditions, time for leisure and rest, support for family and social values, adequate compensation, and access to adequate health care (all factors of the Decent Work Scale), they are more likely to fulfill three basic needs: survival needs, social connection, and self-determination (Allan, Autin, & Duffy, 2016; Blustein, 2006; Duffy et al., 2016).

The Decent Work Scale, constructed by Duffy et. al., (2017) measures what it means to have access to decent work (safe conditions, time for leisure and rest, support for family and social values, adequate compensation, and access to adequate health care) in the United States. However, a big gap in the social sciences is the lack of external validity. Psychological research has mainly focused its attention on western, educated, industrialized, rich, and democratic (WEIRD) nations and then generalized to other non-western populations (Henrich, et. al., 2010). This is problematic because work differs across cultural settings. Differences include a balance between occupation and other social roles, societal situations, type of social security system, labor laws, and family structures. Therefore, the purpose of this dissertation is to extend the

research on the PWT (Duffy et al., 2016) into the Indian context by psychometrically evaluating the Decent Work Scale with an English-speaking sample of employees in India. Correlates in this evaluation will focus on work-related outcomes.

History and Definition of Decent Work

This first section is dedicated to explaining what decent work is and how the construct came to be. First, the specialized agency of the United Nations, the International Labor Organization (ILO), defined decent work as "the sum of people's aspirations for opportunity and income; rights, voice and recognition; family stability and personal development; and fairness and gender equality" (ILO, 1999, p. 3). This definition has been the foundational framework for most of the decent work research thereafter (Pereira, et. al., 2019). In addition, the ILO (2008) released 11 substantive elements (SE) and four pillars that describe Decent Work.

Substantive Elements of Decent Work

1. employment opportunities
2. adequate earnings and productive work
3. decent working time
4. combining work, family, and personal life
5. work that should be abolished
6. stability and security of work
7. equal opportunity and treatment in employment
8. safe work environment
9. social security
10. social dialogue, employers' and workers' representation
11. economic and social context

Pillars of Decent Work

1. Governments and policymakers put in a reasonable effort to provide job opportunities for people.
2. Employees are protected by fair labor practices by appropriate legal frameworks. This can include access to collective bargaining and representation.
3. Social dialogue is implemented between employers, workers, and the government.
4. Decent work seeks to "ensure that women and men enjoy working conditions that are safe, allow adequate free time and rest, take into account family and social values, provide for adequate compensation in case of lost or reduced income, and permit access to adequate healthcare."

The Psychology of Working Theory

One of the reasons decent work is of particular interest to the ILO and the workforce is that the construct integrates broader social and contextual factors that employees face through the Psychology of Working Theory framework (PWT) (Duffy et al., 2016). The PWT is different from the traditional theories which focus on internal aspects of an employee. These traditional theories include Social Cognitive Theory which focuses on whether a person will engage in a specific behavior based on past experiences and reinforcements (Lent, 2013), Person-Environment Fit which suggests people have an innate need to seek out environments that match their own characteristics (Holland, 1997), and the Constructivist Perspective which construes that learners build on their existing foundation to learn new information (Savickas, 2013).

In contrast to these traditional theories, the PWT model illustrates a holistic picture by first describing predictors of decent work which include marginalization, economic constraints,

work volition, and career adaptability. Additionally, the model describes the outcomes of decent work which include need satisfaction, work fulfillment, and well-being.

Predictors of Decent Work

Marginalization

Marginalization is defined as "the relegation of people (or groups of people) to a less powerful or included position within a society" (Duffy et al., 2016, p. 132). The PWT specifically focuses on sexual and gender minorities, people with disabling conditions, immigrants, and racial or ethnic minorities.

Two primary concerns are postulated as reasons why marginalization is a predictor of decent work. First, marginalization significantly reduces equal access to resources that lead to decent work. For example, being excluded based on race/ethnicity and gender severs people's access to mainstream societal institutions such as gaining job opportunities or getting a college education (Aronson, 2008; Diemer & Blustein, 2007; Merton, 1957). Regarding immigration (or assumed immigration) status, a different study showed that workers with Japanese or Mexican-Spanish accents had fewer positive outcomes from managerial decision-making (Hosoda & Stone-Romero, 2010) and were less likely to get hired than people with standard American English accents (Hosoda, et. al., 2012). Moreover, undocumented immigrants often lack access to social security and driver's licenses, forcing them to take work that has long hours, inadequate pay, unsafe working conditions, and little to no protection against exploitation from employers (Binggeli et. al., 2013; Marfleet & Blustein, 2011). Additionally, there are not many workplace protection policies set for sexual minorities when being discriminated against because they are deviating from traditional gender stereotypes upheld by these policies. This leads to several negative work-related outcomes for the LGBT+ community such as decreased job satisfaction

and engagement (Brewster et. al., 2012). Moreover, employees with disabilities also face several work-related psychological outcomes because their able-bodied coworkers and management fail to understand the severity of their disabilities (Crooks, 2007). This includes a lack of disability training and sensitivity training to diminish discomfort or unfamiliarity regarding people with disabilities, concern about the cost of health care coverage, and buy-in from leadership to accommodate disabilities.

Second, marginalization reduces individuals' engagement levels; a key factor in both contextual and task performance, job satisfaction, organization commitment, job involvement, and motivation (Christen et al., 2011). In fact, signs of disengagement occur as early as kindergarten. For example, Black, as well as poor and working-class students feel less connected to K-12 and postsecondary institutions (Cohen et. al., 2006; Stephens et al, 2014; Walton & Cohen, 2011). Moreover, female students feel excluded and less engaged when they do not see representation in STEM fields (Miyake et al., 2010).

Economic Constraints

Economic Constraints are defined as "limited economic resources (e.g., household income, family wealth) which represent a critical barrier to securing decent work" (Duffy et. al., 2016 p. 133). Similar to marginalization, economic constraints act as a barrier to equal access to resources and may be evidenced as early as childhood.

First, economic constraints prevent families and individuals to invest in resources that foster achievement, career development, and/or occupational attainment (Huston & Bentley, 2010). Furthermore, people that live in or near poverty are more likely to attend schools that hold lower levels of academic rigor and limited access to career development such as intrinsically

rewarding (oftentimes unpaid) internships and/or vocational exploration activities (Diemer & Rasheed Ali, 2009).

Second, economic constraints not only limit resources but also affect how parents talk to their children. For example, affluent parents are more likely to speak in supporting and stimulating ways than working-class parents (Hart & Risley, 1995). These speech patterns help children gain a more advanced vocabulary. Moreover, economic stress on working parents decreases parental relationship quality, psychological well-being, and capacity to engage in rich conversations with their children (Conger et al., 1992). Consequently, these disparities impact children's vocabulary and expressive abilities which, in turn, impact academic success (Hart & Risley, 1995).

Moving into adolescence, parents in higher social classes provide access to successful social networks to their children. This helps their children by accessing positive work experiences, fostering career development, and securing decent work. Interestingly, in line with Person-Environment Fit, more affluent parents socialize their children into working for jobs that offer decent work conditions (Aronson, 2008). This can especially show up during interviews where employers are looking for a "fit" with their organization.

Work Volition

Work volition is defined as "an individual's perception of choice in career decision-making despite constraints" (Duffy et. al., 2016, p. 135). Work volition is related to a host of positive outcomes including increased career maturity, sense of control, work meaning, job/life satisfaction, and person-environment fit (Duffy et al., 2012; Duffy, et. al., 2013; Duffy et al., 2014; Duffy, et. al., 2015). Individuals who are marginalized and face economic constraints, but

who perceive that they can be successfully engaged in meaningful and fulfilling employment, have a greater likelihood of finding decent work.

Career Adaptability

Career adaptability is defined as the "psychological construct that denotes an individual's readiness and resources for coping with current and anticipated tasks of vocational development" (Savickas, 2002, p. 156). When having access to the four subcomponents of career adaptability (feeling concerned, control, curiosity, and confidence over one's career), individuals experience higher levels of career maturity, work fulfillment, and self-efficacy (Douglass & Duffy, 2015; Guan et al., 2013; Zacher, 2014). Individuals who exhibit the four subcomponents of career adaptability promote positive attitudes regarding their current and future careers, and thus, are more likely to have access to decent work.

Outcomes of Decent Work

PWT stresses the importance of working for overall psychological health (Blustein, 2008). This statement is backed up by decades of research showing evidence that work can provide meaningfulness, fulfillment, and happiness (e.g., Rosso et. al., 2010). Therefore, PWT theorizes that individuals who obtain decent work will achieve work fulfillment and well-being through the satisfaction of three sets of needs: survival needs, social connection needs, and self-determination needs (Blustein et. al., 2008). The three groups of needs not only act as outcomes of decent work but also play a role as mediators to achieve work fulfillment and well-being.

Survival Needs

Survival needs are indicative of food, shelter, and social capital. Decent work secures these needs through fair wages, safe working conditions, and security for families (Anker et. al., 2003).

Social Connection Needs

To survive, humans require connection, attachment, and belonging (Baumeister & Leary, 1995). Relationships built at work are one source for meeting these connection needs. For example, clients, coworkers, and supervisors can foster meaning and provide indirect social connections to the broader economic, social, and political society (Blustein, 2011). Therefore, healthy workplaces that build connectedness will facilitate decent work and ultimately aid individuals in meeting social connection needs.

Self-Determination Needs

Lastly, self-determined individuals engage in activities that are intrinsically or extrinsically motivating in a meaningful order (Ryan & Deci, 2002). Although intrinsic motivation leads to positive outcomes such as academic success and well-being, the majority of people do not have access to intrinsically motivated jobs (Blustein, 2006).

Self-Determination Theory (SDT), therefore, explains why people engage in activities that are not necessarily intrinsically interesting. More specifically, two types of regulation explain this phenomenon. First, identified regulation refers to jobs that are motivated by external benefits such as working a tedious job to support one's family (Duffy et. al., 2016). Second, integrated regulation refers to when a person fully integrates work activities into their value and motivational system, even if they may not be inherently intrinsically rewarding, and creates a sense of self-directed initiation (Ryan & Deci, 2000). Therefore, along with intrinsic motivation, identified and integrated regulation comprises self-determined activities that create pathways to meaningful work via decent work.

Work-fulfillment

Work-fulfillment is defined as "work that is personally satisfying and meaningful" (Duffy et al., 2016 p. 138). Survival needs are linked to work-fulfillment because individuals working in

low-paying jobs (least likely to earn enough to meet survival needs) tend to be most dissatisfied with their jobs (Clark et. al., 1996). Furthermore, studies have also shown that people who have high income and education levels were more likely to live out their callings (Duffy et. al., 2013). Therefore, meeting survival needs through decent work predicts work-fulfillment. Second, social connection needs also impact work-fulfillment through decent work in two ways. First, studies have shown that sustained, positive, and supportive contact with coworkers is a key predictor of workplace satisfaction, which boosts fulfillment (Ducharme & Martin, 2000). Second, the more individuals can benefit the lives of others and see the outcomes of their work, the greater their job satisfaction, sense of meaningfulness, and performance (Allan et. al., 2014). Therefore, social connection needs via interpersonal connection and prosocial activity lead to work fulfillment. Third, SDT shows that the more people internalize their work and perceive it as self-motivating, the more likely they are to experience meaningfulness in that work. For example, Andreassen et. al., (2010) found self-determination need satisfaction positively related to work enjoyment in a sample of employees. Likewise, Baard, et. al., (2004) found the fulfillment of self-determination needs predicted the psychological adjustment of workers in the banking industry.

Well-Being

Well-being is defined as "a person's cognitive and affective evaluation of his or her life" (Diener et. al., 2002, p. 63). First, well-being relates to survival needs because several studies have shown that financial resources play a big part in predicting well-being and happiness (Diener, 2000; Kahneman & Deaton, 2010). Moreover, this idea is supported internationally: the most poverty-stricken nations tend to be the lowest in subjective well-being (Diener et. al., 2015). Second, social connection at work suggests well-being effects. For example, when people are connected to the role of their job in the larger society, they have a more solid sense of

identity, high self-esteem, and greater social worth (Grant, 2017). Third, there is empirical evidence that demonstrates achieving self-determination needs predict several well-being variables (Deci & Ryan, 2008). For example, the pursuit of intrinsic goals positively relates to self-esteem, self-actualization, and negatively relates to depression and anxiety. Conversely, the pursuit of extrinsic goals inversely relates to well-being indicators (Kasser & Ryan, 1996).

In summary, if an individual overcomes the predictors mentioned earlier (economic constraints, work volition, marginalization, career adaptability) and obtains decent work, they will meet three needs satisfaction groups: survival needs, social connection needs, and self-determination needs (Blustein et. al., 2008). Once those three satisfaction groups are met, the final outcomes will be reached: work-fulfillment and well-being.

Previous Measures Developed

The definition and substantive elements of the decent work construct that the ILO describes, specifically focusing on the fourth pillar of decent work, can be complex because the construct may concern an employee's external locus of control. External locus of control is defined as believing what happens to you is the result of luck, fate, or authority, thus having little to no control over what happens to you (Lefcourt, 1991). This can include but is not limited to social security, labor practices, economy, job opportunities, job demands, and resources. However, it is important to add nuance to this. Every individual is placed on a spectrum from low to high external locus of control. Given the systematic nature of this construct, researchers have created surveys that measure an employee's point of view on whether they receive decent work. Specifically, three different instruments have been developed in measuring decent work.

Diagnostic Tool

Webster et al (2015) recruited 1,206 participants in South Africa from three different industries: private security, agriculture, and hospitality. The questionnaire covered 9 of the 11 substantive elements of decent work (elements not covered: economic and social context and work that should be abolished).

Although this questionnaire was a good starting point in understanding that decent work deficits varied by industry, the measure has poor psychometric properties. Questions on the survey were categorical rather than continuous. Therefore, researchers only ran simple correlations. Furthermore, no exploratory/confirmatory factor analyses were conducted to provide evidence for relationships between the measured variables. Furthermore, no evidence was shown for reliability or validity in the measure.

Decent Work Questionnaire (DWQ)

Ferraro et al (2016) recruited 1,675 participants from Portugal and Brazil for their decent work questionnaire construction. All 11 substantive elements were identified to describe decent work, and in the questionnaire, at least two items represented each substantive element. The researchers concluded with a 31-item scale identifying seven factors: (a) fundamental principles and values at work, (b) appropriate working time and workload, (c) fulfilling and productive work, (d) meaningful retribution for the exercise of citizenship, (e) social protection, (f) opportunities, and (g) health and safety. The scale demonstrated adequate psychometric properties via confirmatory factor analysis for both settings: Brazil (CFI = .90, RMSEA = .06 SRMR= .08, $\chi 2$ = 1212.88); Portugal (CFI = .91, RMSEA = .06 SRMR= .07, $\chi 2$ = 944.80). Moreover, the scale indicated adequate internal reliability for all seven factors in both samples with a cutoff above (r = .50).

Decent Work Scale (DWS)

The DWS focuses exclusively on the fourth pillar of decent work which is defined as "ensuring that women and men enjoy working conditions that are safe, allow adequate free time and rest, take into account family and social values, provide for adequate compensation in case of lost or reduced income, and permit access to adequate healthcare" (ILO, 2008). The fourth pillar represents an individual's perceptions of whether they adequately experience decent work. Therefore, Duffy et al. (2016) concluded that decent work consists of the following:

> (a) physically and interpersonally safe working conditions (e.g., absence of physical, mental, or emotional abuse), (b) hours that allow for free time and adequate rest, (c) organizational values that complement family and social values, (d) adequate compensation, and (e) access to adequate health care (p. 130).

The Decent Work Scale is a 15-item self-report measure that assesses the attainment of decent work among employed adults (Duffy et. al., 2017). This measure utilizes a 7-point Likert scale (1 = *strongly disagree* to 7 = *strongly agree*). Examples of items include, "I feel emotionally safe interacting with people at work." A confirmatory factor analysis demonstrated a 5-factor bifactor model (CFI = .98, RMSEA = .04). The components of decent work are (a) physically and interpersonally safe working conditions, (b) access to health care, (c) adequate compensation, (d) hours that allow for free time and rest, and (e) organizational values that complement family and social values (see Measures for more psychometric details).

In summary, Webster et. al. (2015) covered 9 out of the 11 substantive elements with poor psychometric properties and Ferraro et. al. (2016) covered 11 out of 11 SEs with adequate psychometric properties. What differentiates the Decent Work Scale (DWS; Duffy et. al., 2017) is that the measure solely focuses on the fourth pillar of decent work, which primarily attends to

the individual's experience, whereas the first three pillars focus on workers' aspirations in general.

Countries that Successfully Demonstrated Bifactor Modeling on DWS

After the publication release of the DWS, eight countries sought to conduct invariance testing with the measure. The countries were Switzerland (Masdonati et. al., 2019), the United Kingdom (Dodd, et. al., 2019), Portugal (Ferreira et al., 2019), Italy (Di Fabio & Kenny, 2019), South Korea (Nam & Kim, 2019), Turkey (Buyukgoze-Kavas & Autin, 2019), Brazil (Ribeiro, Teixeira, & Ambiel, 2019), and France (Vignoli et al., 2019). Results indicated that data from seven of the eight countries outside the U.S. provided support for a bifactor structure (Switzerland exhibited a second-order structure). This shows that items loaded on both a general factor (decent work) as well as the five individual factors. Therefore, the evidence from seven countries from four different continents providing evidence that the DWS scale can be implemented in different cultures provide strong support for a bifactor structure being devised and implemented in India.

The Indian context

This next section will provide context on the current state of India such as population information, workforce data, and the economy. Further, the five factors from the Duffy (2017) DWS will be introduced in an Indian context.

India is the most populated country in the world (1.40 billion). India is a conservative and spiritual country known for placing high value in religion. The nation is labeled as the "largest democracy in the world," run with a parliamentary system governed under the Constitution of India (O'Neil, 2021).

The country has the second-largest labor force, comprised of 522 million workers (CIA, 2021). The service sector makes up 55.6% of the GDP, the industrial sector 26.3%, and the agricultural sector 18.1%. Major industries include agriculture, textiles, telecommunications, chemicals, pharmaceuticals, biotechnology, food processing, steel, transport equipment, cement, mining, petroleum, machinery, and software (Library of Congress, 2004).

Although India stands as one of the largest economies in the world, the nation has suffered more significant losses than most countries during the COVID-19 pandemic in 2020. Overall, gross domestic product in 2020 fell from 2,870.50 billion US Dollars to 2,660.25 billion US Dollars (WorldData.info, 2021). The unemployment rate rose from 5.3 to 7.1 percent. The consumer inflation rate has risen from 3.7% previously to 6.6% currently. Those affected the most were the 100 million (37% of India's labor force) migrant workers who normally traveled from poor states such as Bihar and Uttar Pradesh to richer states for work. For these unemployed and their families, the pandemic led to emotional distress, famine, poor living and working conditions, and in some situations, suicide. Like other countries around the world, India is slowly recovering from economic and social loss with the help of vaccines and government funding (WorldData.info, 2021).

Five Factors of Decent Work in an Indian Context

Working Conditions

Working conditions include the impact they have on employees including injuries and diseases. According to the National Institute of Health and Family Welfare (2014), India accrues 17 million non-fatal injuries (17% of the world's incidence) and 45,000 fatal injuries (45% of the world's incidence) due to occupational injuries each year. Moreover, out of 11 million cases of occupational diseases in the world 1.9 million cases (17%) occur in India; out of 0.7 million

deaths in the world, 0.12 (17%) occur in India. Globally, the most common occupationally related diseases include silicosis, musculoskeletal injuries, coal workers' pneumoconiosis, chronic obstructive lung diseases, asbestosis, byssinosis, pesticide poisoning, and noise-induced hearing loss. These working condition statistics mostly account for blue-collar jobs; white-collar jobs are known to have less job strain and more organizational support (WHO, 2022).

Four main legislations cover Occupational Safety and Health at the workplace in India (ILO, 2016). First, the 1948 Factories Act enforces safety within factories. Second, the 1952 Mines Act and Mines Rules, of 1955 oversee the mining industry. Third, the 1986 Dock Workers Act (Safety, Health, and Welfare) followed by notification of the Dock Workers (Safety, Health, and Welfare) Regulations, 1990 deals with the major ports of India. Fourth, the 1996 Building & Other Construction Workers (Regulations of Employment and Conditions of Service), covers construction workers at construction sites.

Access to Health Care

The Constitution of India declares that the government ensures the right to health for everyone. All citizens of India are eligible for free healthcare at government facilities for outpatient and inpatient care. However, the public sector is extremely underfunded, and facilities oftentimes experience shortages of staff and supplies (Columbia Public Health, 2021). Due to a lack of resources, many Indian citizens turn to the private sector for care. However, this is a privilege that only higher-income individuals can access because most of the private health system is funded by out-of-pocket payments. Approximately 37% of the population has healthcare coverage, whether by PM-JAY (program financed by taxes) or by employment-based insurance, regional schemes, or voluntary for-profit insurance, among other options (Columbia Public Health, 2021). Moreover, the public health system is dictated by India’s 28 states and

seven territories, showing noticeable variability. Insurance coverage, availability, and access all depend on the poverty or wealth of each state. Rural areas suffer even more from physician shortages and less adequate health care (Columbia Public Health, 2021).

Adequate Compensation

The 2020 WorldData.info estimates the Indian average annual wage was $1,920 in comparison to the United States which was $69,392. The World Inequality Report indicates extreme income inequality, with the bottom 50% earning $720 annually while the top 10% earning over 20 times more: $15,685. While the top 10% and top 1% of earners hold respectively 57% and 22% of total national income, the bottom 50% share has gone down to 13%. Moreover, gender inequalities in India are very high. The female labor income share is equal to 18%. This value, slightly higher than the average share in the Middle East (15%), is one of the lowest in the world. The significant increase observed since 1990 (+8 p.p.) has been insufficient to lift women's labor income share to the regional average (World Inequality Report, 2021).

Hours that Allow for Free Time and Rest

Typical work hours in India are 40 hours per week as of 2017, ranking 14th in the world. The average minutes for leisure activities (e.g., sleep, housework and shopping, TV and radio, seeing friends) for a typical Indian worker aged 15-64 is 253 minutes; compared to 292 minutes in the United States. Gender disparities are reflected in the data for leisure activities: Indian men (283 minutes of leisure per day) enjoy 62 minutes more time than Indian women (221 minutes).

Organizational Values Complement Family and Social Value

India is complicatedly mixed as both a collectivistic and individualistic culture (Hofstede, 1991). Collectivism means people are expected to act in a way that benefits the

greater good. Employers will expect loyalty and employees will expect familial protection. Hiring and promotion decisions are often based on relationships. On the other hand, one reason this country is swayed individualistic may be that it is 79% Hindu. Hindus believe that the manner of each rebirth is dependent on how the individual lived in the previous life. People are therefore responsible for the way they lead their own lives (Hofstede, 1991).

In terms of power distance, India very much appreciates hierarchy and top-down structure in society and organizations. In fact, people are assigned their place in the hierarchy as early as birth (caste; Carl et. al., 2004). Respect to superiors including the elderly, teachers, and employers has been a strong value to this country for centuries. In the organization specifically, employees are expected to be obedient and directed. Negative feedback to superiors is rare and attitude is almost always formal.

The more than-average scores on Hofstede's masculinity index show that the Indian culture values more masculine than feminine traits, thus creating inequality between male and female employees (Hofstede, 1991). Men appear to be perceived as more physically strong, assertive, and suitable for tough jobs, whereas women are perceived as soft, humble, and more suitable for household chores and serving their families (Budhwar, 2008). Until recently, the female literacy rate in India was very low (it is still very low in many states) and a small number of females sought employment (see Budhwar, 2001; Budhwar et al., 2005), confirming the masculine nature of Indian society.

The Present Study

The aim of the dissertation was to gain a better understanding of how decent work is defined and can be assessed in the Indian context. To reach these aims, we administered the existing Duffy et al. (2017) Decent Work Scale to English-speaking Indian employees residing in

India using a quantitative approach. We chose to remain with English because the language is recognized as one of India's official languages. Regarding the quantitative analyses, we assessed the dimensionality, reliability, and construct validity of the Indian version of the Decent Work Scale. In line with the development of the original U.S. version (Duffy et al., 2017), a confirmatory factor analysis (CFA) was conducted to examine several possible models.

We hypothesized, similar to Duffy et al. (2017), that data from the Indian sample will fit a bifactor model where items correspond to a single common factor (decent work) while also controlling for the multidimensionality of the five components.

Assessing Validity

There are two types of validity that will be assessed to make sure the Decent Work Scale is measuring what it is supposed to measure without contamination from other characteristics. The first is discriminant validity, which refers to low/non-significant correlations between the instrument-of-interest and another instrument. In other words, the two instruments should be unrelated. In this case, we will be using job tenure, the amount of time someone spends in a job should not dictate whether they obtain decent work.

The second type of validity that will be assessed is convergent validity. Convergent validity refers to high/significant correlations between our instrument-of-interest and another instrument. In other words, both instruments should be related. In this case, we will be correlating job satisfaction, work meaning, withdrawal intentions, and occupational fatigue with decent work to demonstrate convergent validity. According to Duffy et. al. (2016), theoretically, higher levels of decent work would predict greater satisfaction and meaning in one's job as well as lower withdrawal intention and occupational fatigue. Moreover, Duffy et. al. (2017) used these four measures to demonstrate predictive validity with decent work. Results showed that job

satisfaction and work meaning had a significant and positive relationship with decent work and a significant and negative relationship with withdrawal intentions and occupational fatigue.

CHAPTER II

Method

Participants

Inclusion Criteria

The total sample size we recruited was 350 participants via Amazon Mechanical Turk. Participants were of Indian descent, 18+ years of age, fluent in English, and lived in India. Participants were also required to be employed within an organization. Participants that did not meet these criteria were exited from the survey and removed from the sample.

Instruments

Decent Work Scale

To date, there have been two studies involved in the development and psychometric evaluation of the DWS. In the first, a team in counseling psychology consisting of an associate professor, two assistant professors, and three doctoral students reviewed, assessed, and came to a consensus of 53 items for the 5 components of decent work. The scale was on a 7-point Likert scale ranging from *strongly disagree* to *strongly agree*. Participants (N = 300, employed) were recruited from Mechanical Turk (MTurk) in the United States. After removing participants who did not meet the attention checks on two questions, the total number of participants was 275.

Once the data was collected, researchers conducted an exploratory factor analysis. Duffy et. al., (2017) removed 18 items that did not meet the following criteria: (a) items must load .50 or higher with their associated factor and at least three items were loading .50 or higher on every factor (Costello & Osborne, 2005), (b) the loading of an item on one factor must be greater than

.15 apart from the loading of another item, (c) items were evaluated for content validity and specificity based on recommendations by Worthington and Whittaker (2006).

After the removal of items based on the criteria listed above, the scale contained 35 items and the 5 factors accounted for 67.18% of the variance. A final EFA was conducted with the 15 items. The updated scale accounted for an 84.11% variance. All items loaded .66 or higher, cross-loadings between items were greater than .40, and the five subscales had strong internal consistency reliability ranging from .82 to .97. In conclusion, results from the study demonstrate evidence for a multidimensional measure of decent work.

In the second study, researchers conducted a confirmatory factor analysis to confirm DWS's factor structure. A correlational model, a higher-order model, and a bifactor model were all tested. Results indicated that the bifactor model was the best fit ($X^2(75) = 151.31$, $p < .001$, CFI = .98, TLI = .98, RMSEA = .04, 90% CI [.03, .05], and SRMR = .05) suggesting that items shared a common, underlying factor while also loading onto their own subfactors.

Invariance testing evaluated whether the responses to the scale were equally valid between participants regarding race/ethnicity, gender, income, and subjective social class. Three models were tested on all three groups: configural, metric, and scalar. Results indicated that fit did not decline for any of these models suggesting equal validity between all the groups.

Lastly, validity was examined. Results demonstrated that three of the five subscales strongly correlated with scores from their associated convergent instrument (adequate compensation subscale with pay satisfaction; Heneman & Schwab, 1985), free time and test subscale with occupational fatigue (Winwood, et. al., 2006; Winwood, et. a., 2005), and complementary values subscale with workplace fit perceptions (Cable & DeRue, 2002). In the case of access to health care subscale with health care satisfaction (Hays, et. al., 1987) the DWS

subscale correlated more strongly with pay satisfaction. The authors suggested that this may be occurring because the pay satisfaction measure also contained items related to satisfaction with benefits. In the case of the safe working conditions subscale, the subscale equally correlated with its convergent scale with job safety (Hayes, et. al., 1998) and occupational fatigue. Further, the authors suggested that the job safety measure was only concerned with physical safety whereas the safe working conditions subscale focused on both emotional and physical safety. Emotional safety could have been related to experiencing the job as safe and lower levels of occupational fatigue.

All five of the convergent instruments demonstrated adequate discriminant validity with the total scores from DWS. In conclusion, the DWS scales demonstrated reasonable support for convergent and discriminant validity.

JSS

The Job Satisfaction Scale (JSS; Judge et. al., 1998) measures how satisfied participants were with their current jobs. This scale has five items and uses a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). A sample item includes, "Most days I am enthusiastic about my work." Strong internal reliability has been reported and the JSS correlates well with other job satisfaction measures (Judge et. al., 1998).

WAMI

The Work and Meaning Inventory (WAMI; Steger, et. al., 2012) measures participants' level of meaning and their feelings towards work. This scale has 10 items and uses a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). A sample item includes, "I understand how my work contributes to my life's meaning." The WAMI has strong internal consistency reliability (a = .93).

Withdrawal Intentions

The Withdrawal Intentions (Blau, 1985) instrument is a 3-item scale that measures the intention to withdraw from one's occupation. These items were: "I am thinking about leaving my current occupation," "I am actively searching for an alternative to my occupation," and "I intend to stay in my current occupation for some time." Across several studies, this instrument shows strong internal reliability (a = .70 - .87).

Occupational Fatigue

The Occupational Fatigue (Winwood et al., 2005, 2006) instrument is a 15-item that measures participants' experience of fatigue and strain at work and home. Each response uses a 7-point Likert scale ranging from 0 (*strongly disagree*) to 6 (*strongly disagree*). A sample item includes "I never have enough time between work periods to recover my energy completely." The instrument shows strong internal consistency reliability (a = .95).

Procedure

First, IRB approval was received from SPU to conduct this study. Next, participants (N = 350) were recruited via Amazon Mechanical Turk with an incentive of 178 Rupees (2.40 USD) for completing the survey. Two validity checks were added to make sure participants pay attention during the survey. Participants first answer some demographic questions then fill out the DWS scale, and the three other scales (JSS, WAMI, Withdrawal Intentions). Lastly, participants were briefed on the purpose of the study and thanked.

Statistical Analyses

Invariance Testing

Invariance testing is a statistical procedure that tests whether a scale is equivalent across different samples (Hirschfeld & von Brachel, 2014). For the purpose of this study, invariance

testing was planned to investigate whether or not the Decent Work scale is equivalent or different from an Indian sample compared to the U.S. sample, which served as the basis for its initial psychometric evaluation (Duffy et al., 2017).

The best strategy to use for invariance testing is the free baseline approach (Hirschfeld & von Brachel, 2014). The free baseline approach tests for measurement invariance in a hierarchical model trimming process in the order of weak, strong, and strict invariance. It is important to note that in order to conduct invariance testing, there are prerequisites to fulfill. This includes the magnitude and direction of factor loadings and the acceptability of fit indices. If prerequisites are not met, we cannot move forward with invariance testing.

Discriminant and Convergent Validity

For discriminant validity, job tenure is expected to have no significant associations with the DWS subscales. I hypothesized that experiencing decent work is unrelated to the amount of time someone is in a job but rather the specific experiences within the workplace.

To evaluate the aspects of convergent and discriminant validity within the realm of employment or work-related outcomes, I hypothesized that the DWS would positively correlate with measures of job satisfaction and work meaning and negatively relate with withdrawal intentions and occupational fatigue (Duffy et. al., 2016). In line with the PWT, higher levels of decent work would predict greater satisfaction and meaning in one's job as well as fewer intentions to withdraw (Duffy et al., 2016).

CHAPTER III

Planned Results

Missing Data

For the initial data sample, 350 participants began the survey. Two manipulation checks were administered to make sure the participants were paying attention and were not skipping questions at random checks (Buhrmester et al., 2011; Hauser & Schwarz, 2015). The manipulation checks were “Please select “Strongly Disagree.” Furthermore, participants that submitted the survey more than once were also deleted. After removal, the final sample was 311 participants. Full information maximum likelihood (FIML) was used during data analysis in R to produce unbiased parameter estimates and standard errors under MAR and MCAR (Enders & Bandalos, 2001). The process works by estimating a likelihood function for each individual based on the variables that are present so that all the available data are used.

Participant Description

In our sample, 80% identified as male, and 20% identified as female. This aligned closely with the overall Indian working population where 76.03% of males account for the total workforce (Statica, 2023). Furthermore, 92% of the sample reported being under the age of 35, reflecting the overall average working age in India which is 29 years old (The Economic Times, 2015). Lastly, 93% of the sample had under 5 years of tenure in their current profession, not quite aligning with the overall Indian population who reported 64% (Times of India, 2015). Therefore, except for tenure, compared to the national Indian average, our sample was representative of the overall Indian population.

Table 1

Participant Description

This Study’s Description	**Overall Indian Population Description**
Male: 80.4% (n = 250)	Male: 76.03%
Average Age: 30.6 years old	Average age: 29 years old
Under 5 years of tenure: 89.5% (n = 379)	Under 5 years of tenure: 64%

Confirmatory Factor Analysis

To evaluate the models, we used confirmatory factor analysis (CFA) in the R package, *lavaan* (v.0.6-9) with maximum likelihood estimation. Our sample size was 311. As is common among SEM researchers, we reported the Chi-square goodness of fit ($\chi 2$). This evaluates the discrepancy between the unrestricted sample matrix and the restricted covariance matrix. Although the associated p-value indicates adequate fit when the value is non-significant, it is widely recognized that a large sample size can result in a statistically significant p-value (Byrne, 2016). The comparative fit index (CFI) is an incremental index, compares the hypothesized model to the independent (null) model. Adequacy of fit is supposed when the CFI is at least .90 and perhaps .95 (Kline, 2016). The root mean square error of approximation (RMSEA) takes into account the error of approximation in the population and expresses it per degrees of freedom. As such, the fit indicator considers the complexity of the model. Ideal values are equal to or less than .05, values less than .08 represent reasonable fit, and values between .08 and .10 represent mediocre fit. The standardized root mean residual (SRMR) is a standardized measure of the mean absolute covariance residual – the overall difference between the observed and predicted correlations. Values greater than .10 may indicate poor fit and inspection of residuals is then advised. Additionally, we used Akaike's Information Criterion (AIC) and the Bayesian Information Criterion (BIC) that take model complexity and sample size into consideration. Models with lower values on each are considered to be superior. Kline (2016) advised researchers to be cautious when using these criteria as strict cut-offs. Elements such as sample size and model complexity should be considered when evaluating fit.

To assess the factor structure of the DWS we examined four separate models: a unidimensional model, a correlated factors model, a second-order model, and a bifactor model.

Support for a unidimensional model would suggest that the model is best presented by a total scale score with no subfactors. Support for a correlated factors model would suggest that the factors are related. Support for a second-order Decent Work factor would suggest that the Working Conditions, Healthcare, Adequate Compensation, Free Time & Rest, and Values subfactors represent facets of the higher-order factor, Decent Work. In the bifactor model, items for each scale are loaded onto both their respective subscale and the overall Decent Work scale (*general factor*). Support for this model would suggest that each subscale has both independent variance and common variance that belongs to an underlying Decent Work factor. If a bifactor model is the best representation of fit to the data, researchers can utilize bifactor indices to determine the proportion of variance accounted for by the subscales and the general factor, respectively.

The first model was unidimensional where each of the 15 items loaded onto a single factor representing overall decent work for the Indian population. Standardized factor loadings ranged between -0.714 and .748 and were all statistically significant. However, given we expect them to be in a uniform direction and with values greater than .5, the range and valence of these factor loadings are concerning. The Chi-square index was statistically significant ($\chi 2$ (90) = 270.105, $p < .001$), indicating misfit. The CFI value of .91 indicated good fit. The RMSEA = .08 (90% CI [.069, .091]) adequate fit. The SRMR value of .045 met the criteria of .10. The AIC and BIC values were 13952.782 and 14121.073, respectively, and will become useful in comparing subsequent models.

The second model was a single-order, multidimensional, correlated factors, model where each of the 15 items loaded onto one of four factors. Standardized factor loadings ranged between -0.711 and .744 and were not all statistically significant. However, given we expect

them to be in a uniform direction and with values greater than .5, the range and valence of these factor loadings are concerning. The Chi-square index was statistically significant ($\chi 2$ (80) = 205.256, $p < .001$ indicating inadequate fit. The CFI value was .93 which indicated good fit. The RMSEA = .072, 90% CI [.060, .085]) which was satisfactory. The SRMR value of .045 remained below the warning criteria of .10. The AIC and BIC values were 13397.369 and 13545.520, respectively.

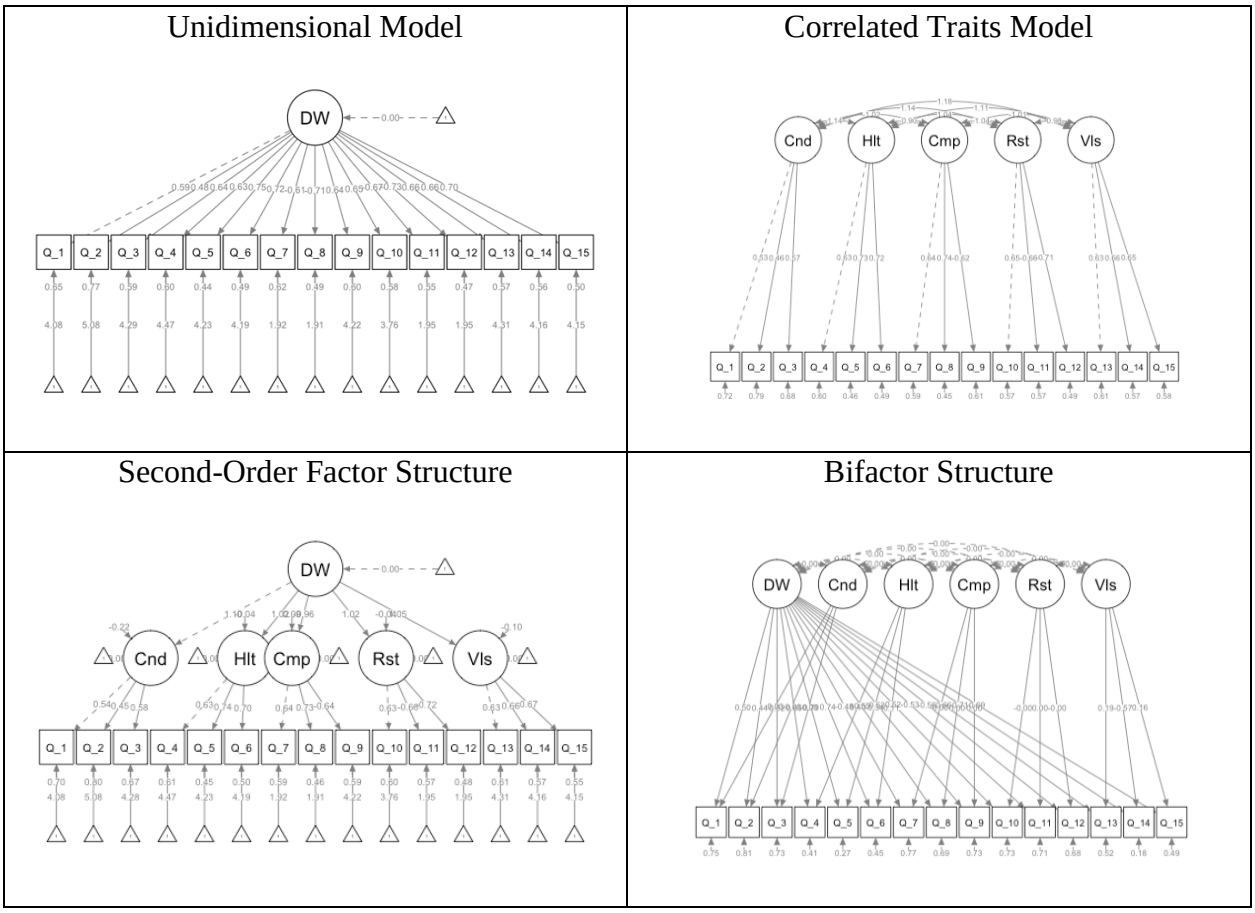
The third model was a second-order structure that regressed the factors into a higher-order decent work factor. Standardized factor loadings ranged between -0.956 and 1.105 and were not all statistically significant. However, given we expect them to be in a uniform direction and with values greater than .5, the range and valence of these factor loadings are concerning. The Chi-square index was statistically significant ($\chi 2$ (85) = 255.337, $p < .001$ indicating inadequate fit. The CFI value was .92 indicating good fit. The RMSEA = .080, 90% CI [.060, .092]) which was satisfactory. The SRMR value of .044 remained below the warning criteria of .10. The AIC and BIC values were 13948.015 and 14135.005, respectively.

The fourth model was a bifactor model which regressed each indicator on its respective factor while simultaneously regressing each indicator onto a decent work factor. Standardized factor loadings ranged between -0.566 and 0.785 and were not all statistically significant. However, given we expect them to be in a uniform direction and with values greater than .5, the range and valence of these factor loadings are concerning. The Chi-square index was statistically significant ($\chi 2$ (84) = 534.201, $p < .001$ indicating inadequate fit. The CFI value was .78 which was inadequate fit. The RMSEA = .134, 90% CI [.123, .145]) which was not satisfactory. The SRMR value of .117 remained below the warning criteria of .10. The AIC and BIC values were 13718.313 and 13851.649, respectively.

It was clear that the problems with the regression weights were due to the negatively worded items. We then re-reversed the items; however, the problems persisted. To further investigate the issue, we ran a principal axis factor to determine how many factors would be extracted if we approached this in an exploratory way.

Figure 1

Confirmatory Factor Structures



Exploratory Factor Analysis

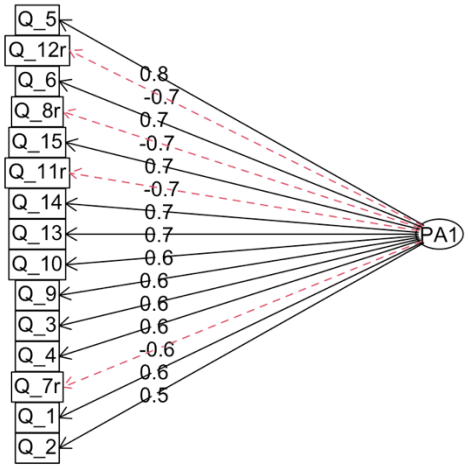
The dimensionality of the 15 items from the Decent Work Scale for the Indian population was analyzed using principal axis factoring. First, data were screened to determine the suitability

of the data for these analyses. The Kaiser-Meyer- Olkin measure of sampling adequacy (KMO; Kaiser, 1970) represents the ratio of the squared correlation between variables to the squared partial correlation between variables. KMO ranges from 0.00 to 1.00 – values closer to 1.00 indicate that the patterns of correlations are relatively compact, and that component analysis should yield distinct and reliable components (Field et. al., 2012). In our dataset, the KMO value was .93, indicating acceptable sampling adequacy. The Barlett's Test of Sphericity examines whether the population correlation matrix resembles an identity matrix (Field et. al., 2012). When the p-value for the Bartlett's test is < .05, we are fairly certain we have clusters of correlated variables. In our dataset, $\chi 2$ (105) =2131.05, $p < .001$, indicating the correlations between items are sufficiently large enough for principal factor analysis.

Four criteria were used to determine the number of factors to rotate: a priori theory, the scree test, the Eigenvalue-greater-than-one criteria, and the interpretability of the solution. Kaiser's eigenvalue-greater-than-one criteria suggested one principal axis factor, and, in combination explained 43% of the variance. The scree plot showed an inflection that justified retaining one component. The rotated solution yielded one interpretable principal axis factor listed with the proportion of variance accounted for PAF 1 (43%). As shown in Figure 2, the reverse-scored items' factor loadings were going in a different direction, proving that they were problematic. The four reverse-scored items are: 7. "I am not properly paid for my work," 8. "I do not feel I am paid enough based on my qualifications and experience," 10. "I do not have enough time for non-work activities," and 11. "I have no time to rest during the work week."

Figure 2

Exploratory Factor Analysis



Discriminant and Convergent Validity

Correlations were examined between the total DWS scores and the five subscale scores with four similar instrument scores (job satisfaction, work meaning, occupational fatigue, withdrawal intentions) to demonstrate convergent validity. To demonstrate discriminant validity, job tenure was used (Table 2).

Even with the poorly performing reverse-scored items included, as hypothesized, for discriminant validity, job tenure had almost no significant association with the overall DWS score (r = .04) and with the DWS subscales (r = .04, .02, .01, .03, .01). Furthermore, as hypothesized, the overall DWS score highly and significantly correlated with work meaning (r = .74) and had a low correlation with job satisfaction (r = .32). Interestingly, occupational fatigue had a strong positive correlation with the DWS score (r=.59) and weak positive correlation with withdrawal intentions (r=.21).

To further investigate why occupational fatigue and withdrawal intentions had a positive relationship with the total Decent Work Scale and a low positive relationship with job satisfaction, we divided the scales up by positively worded questions and reverse-scored

questions. Results showed that participants answered both the reverse-scored items and positively worded items the same, indicating that the respondents were either being careless or did not understand the question due to potential confusion caused by wording. For example, 85.2% of participants indicated that they neither agree nor disagree to strongly agree that they will not be staying in the job. However, in the reverse-scored item, 80.4% answered they intended to stay. Similarly, 74.3% answered they somewhat agreed to strongly agreed they were occupationally fatigued, yet in the reverse-scored item, 72.3% answered they were not occupationally fatigued. Lastly, 75.2% indicated they somewhat agree to strongly agree to being satisfied at work. However, 61.2% indicated they somewhat agree to strongly agreed with not being satisfied at work (Table 3).

Table 2

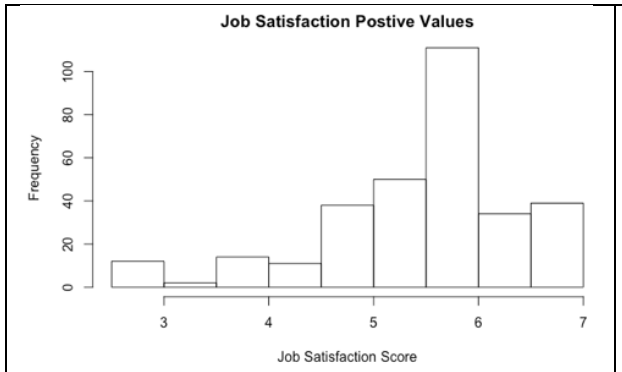
Means, standard deviations, and correlations.

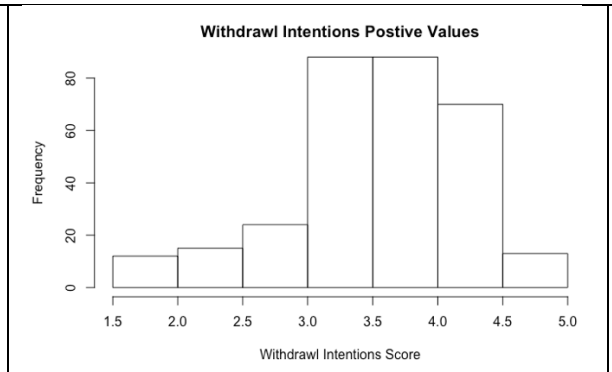
Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10
1. Decent Work	4.73	0.45										
2. Conditions	5.46	0.89	.82**									
3. HealthCare	5.47	1.03	.85**	.70**								
4. Compensation	3.63	0.75	-.08	-.27**	-.37**							
5. Free Time	3.63	0.66	-.22**	-.44**	-.42**	.23**						
6. Values	5.48	1.02	.81**	.69**	.78**	-.46**	-.47**					
7.Work Meaning	5.19	0.72	.74**	.76**	.75**	-.38**	-.43**	.76**				
8. With Int	3.20	0.46	.21**	.27**	.21**	-.11	-.20**	.22**	.27**			
9. Occ Fatigue	4.66	0.47	.59**	.66**	.66**	-.44**	-.39**	.62**	.68**	.26**		
10. Job Sat	4.35	0.47	.32**	.35**	.30**	-.03	-.20**	.25**	.35**	.15*	.21**	
11. Job Tenure	3.50	7.01	.04	.04	.02	.01	.03	.01	.04	.00	-.03	.11*

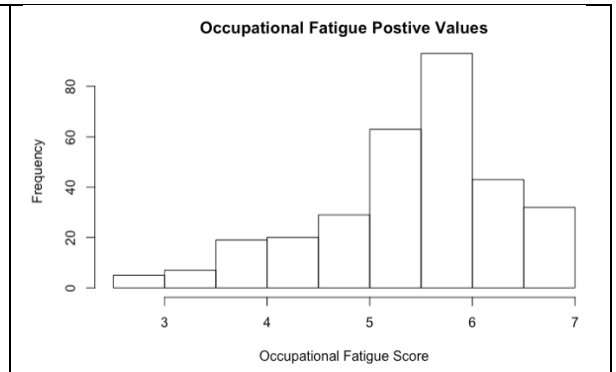
Note. *M* and *SD* are used to represent mean and standard deviation, respectively. Values in square brackets indicate the 95% confidence interval for each correlation. The confidence interval is a plausible range of population correlations that could have caused the sample correlation (Cumming, 2014). * Indicates $p < .05$. ** indicates $p < .01$.

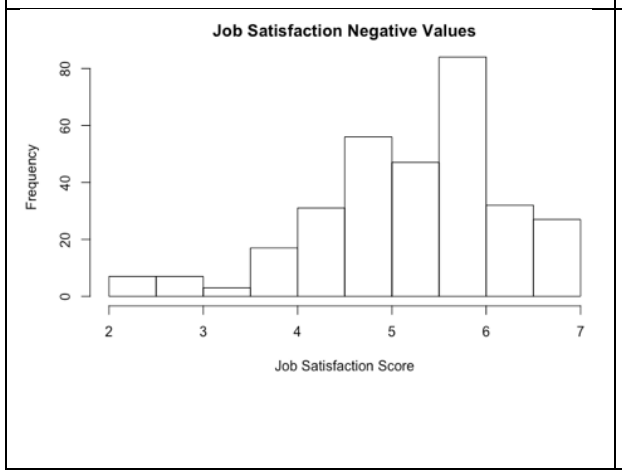
Table 3

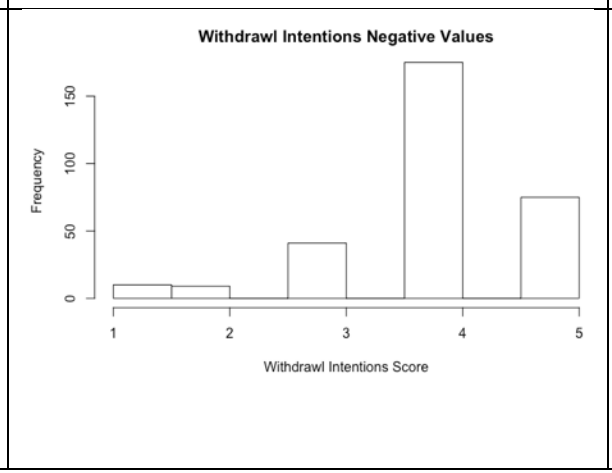
Positive and reverse-scored scores of convergent validity measures

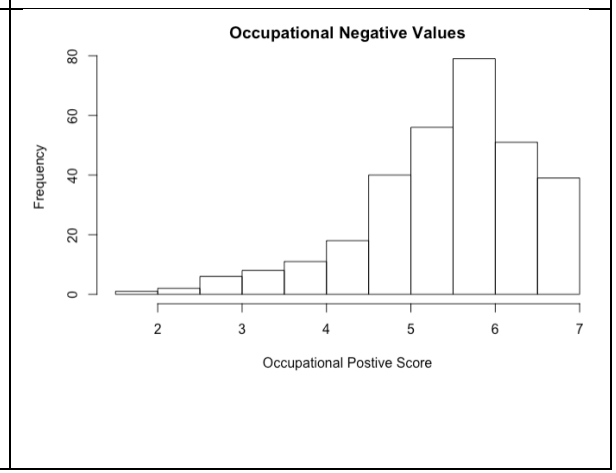












Invariance Testing

A pre-requisite for invariance testing is a baseline model that meets acceptable standards for model fit for the groups of interest. This includes the magnitude and direction of factor loadings and the acceptability of fit indices. Since the CFA showed inadequate factor loadings and the EFA showed only one factor compared to Duffy's (2017) five factors, invariance testing was not appropriate and, therefore, not conducted.

Internal Consistency

Lastly, the total scale score and subscale alpha coefficients were analyzed. For the total scale score, the alpha coefficient was (r = .45). For the subscales, the alpha coefficients were Conditions (r = .53), Healthcare (r = .74), Compensation (r = -.23), Free Time (r = -.87), and Values (r = .69). Given the problems with the reverse-scored items, this was not surprising.

Post-Hoc Results

To further investigate the relationship between reverse-scored items and the results, we took the reverse-scored items out and re-ran the CFA and EFA. The results are discussed in the next section.

Confirmatory Factor Analysis

The first model was unidimensional where each of the 11 items loaded onto a single factor representing overall decent work for the Indian population. Standardized factor loadings ranged between .481 and .759 and were all statistically significant. The Chi-square index was statistically significant ($\chi 2$ (44) = 141.607, $p < .001$), indicating misfit. The CFI value of .92

indicated good fit. The RMSEA = .08 (90% CI [.069, .100]) suggested adequate fit. The SRMR value of .044 was satisfactory. The AIC and BIC values were 10225.073 and 10348.487, respectively, and will become useful in comparing subsequent models.

The second model was a single-order, multidimensional, correlated factors model where each of the 11 items loaded onto one of five factors. Standardized factor loadings ranged between .474 and 1.00 and were all statistically significant. The Chi-square index was statistically significant ($\chi 2$ (36) = 104.352, $p < .001$) indicating inadequate fit. The CFI value was .95 indicating good fit. The RMSEA = .079, 90% CI [.062, .097], which was satisfactory. The SRMR value of .042 remained below the warning criteria of .10. The AIC and BIC values were 9909.005 and 10020.318, respectively.

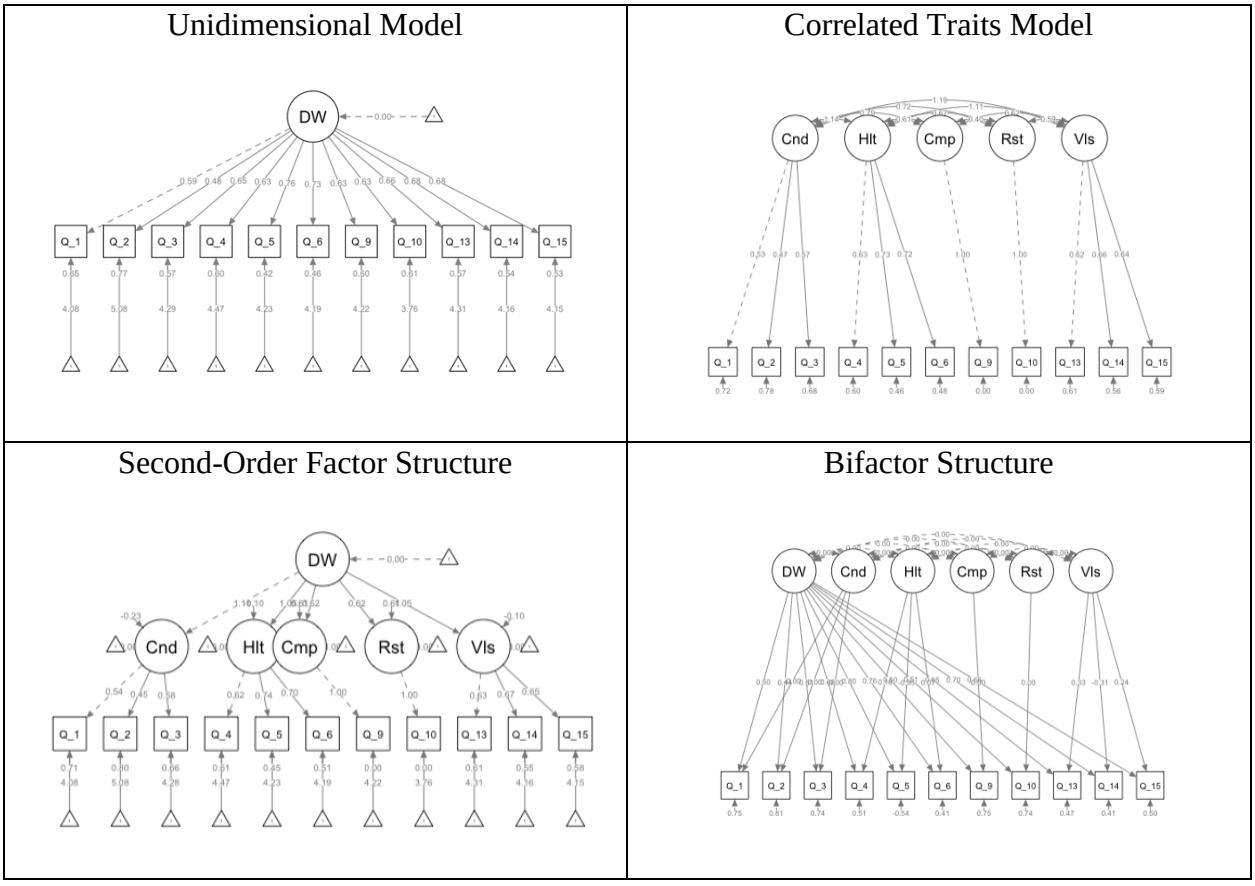
The third model was a second-order structure that regressed the factors into a higher-order decent work factor. Standardized factor loadings ranged between .0452 and 1.00 and were all statistically significant. The Chi-square index was statistically significant ($\chi 2$ (41) = 124.484, $p < .001$) indicating inadequate fit. The CFI value was .94 indicating good fit. The RMSEA = .081, 90% CI [.065, .097] which suggested less than adequate fit. The SRMR value of .042 remained below the warning criteria of .10. The AIC and BIC values were 10213.950 and 10348.583, respectively.

The fourth model was a bifactor model which regressed each indicator on its respective factor while simultaneously regressing each indicator onto a decent work factor. Standardized factor loadings ranged between .441 and .800 and were all statistically significant. The Chi-square index was statistically significant ($\chi 2$ (38) = 218.682, $p < .001$) indicating inadequate fit. The CFI value was .86 indicating inadequate fit. The RMSEA = .125, 90% CI [.110, .142] which

was not satisfactory. The SRMR value of .101 remained close below the warning criteria of .10. The AIC and BIC values were 10019.335 and 10123.227, respectively.

Figure 3

Confirmatory Factor Structures



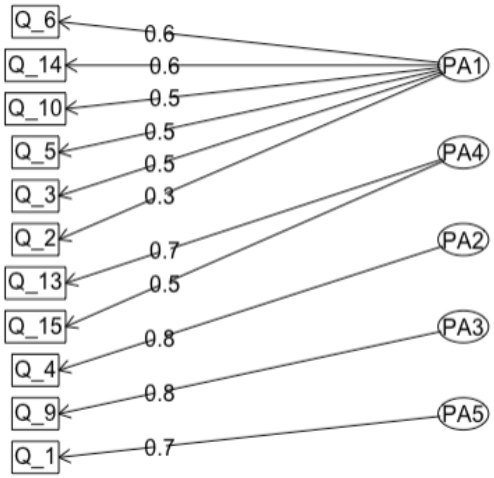
Exploratory Factor Analysis

Four criteria were used to determine the number of factors to rotate: a priori theory, the scree test, the Eigenvalue-greater-than-one criteria, and the interpretability of the solution. Kaiser's eigenvalue-greater-than-one criteria suggested five factors, and, in combination explained 59% of the variance. The scree plot showed an inflection that justified retaining one

principal axis factor. The rotated solution yielded five interpretable principal axis factors listed with the proportion of variance accounted for: PAF 1 (18%), PAF 4 (14%), PAF 2 (10%), PAF 3 (9%), and PAF 5 (8%).

Figure 4

Exploratory Factor Analysis



Discriminant and Convergent Validity

Correlations were examined between the total DWS scores and the five subscale scores with four similar instrument scores (job satisfaction, work meaning, occupational fatigue, withdrawal intentions) to demonstrate convergent validity. To demonstrate discriminant validity, job tenure was used (Table 4).

As hypothesized, for discriminant validity, job tenure had almost no significant association with the overall DWS score (r = .03) and with the DWS subscales (r = .04, .02, .01, .03, .01). Furthermore, as hypothesized, the overall DWS score highly and significantly correlated with work meaning (r = .84) and had highly significant correlation with job

satisfaction (r = .77). However, occupational fatigue had a strong positive correlation with the DWS score (r=.83) and weak positive correlation with withdrawal intentions (r = .52). Similar to the correlation results in the Planned Results section, the unusual relationships with the Decent Work Scale and the convergent validity measure are due to carelessness of the participants.

Table 4

Means, standard deviations, and correlations.

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10
1. DWS	5.46	0.89										
2. Conditions	5.46	0.89	.86**									
3. Healthcare	5.47	1.03	.91**	.70**								
4. Compensation	5.38	1.28	.68**	.56**	.52**							
5. Free Time	5.32	1.38	.70**	.63**	.65**	.45**						
6. Values	5.48	1.02	.90**	.69**	.78**	.52**	.61**					
7. Work Meaning	5.19	0.72	.84**	.76**	.75**	.59**	.64**	.76**				
8. With Int	3.78	0.70	.52**	.48**	.45**	.37**	.43**	.45**	.53**			
9. Occ Fatigue	5.46	0.88	.83**	.73**	.74**	.58**	.59**	.71**	.80**	.57**		
10. Job Sat	5.54	0.90	.77**	.74**	.68**	.52**	.60*	.63**	.77**	.55*	.77**	
11. Job Tenure	3.50	7.01	.03	.04	.02	.01	.03	.01	.04	.07	.01	.09

Note. *M* and *SD* are used to represent mean and standard deviation, respectively. Values in square brackets indicate the 95% confidence interval for each correlation. The confidence interval is a plausible range of population correlations that could have caused the sample correlation (Cumming, 2014). * Indicates $p < .05$. ** indicates $p < .01$.

In conclusion, the post-hoc results show that with the reverse-scored items taken out, the factor loadings and the principal axis factors extracted met the acceptable standards for model fit. However, since the configuration of the items was different (i.e., four of the items were removed from the analysis), invariance testing remains inappropriate.

Internal Consistency

Lastly, the total scale score and subscale alpha coefficients were analyzed. For the total scale score, the alpha coefficient was (r = .89). For the subscales with at least three items (two scales had only one item each), the alpha coefficients were Conditions (r = .53), Healthcare (r = .74), and Values (r = .69). With the reverse-coded items removed, these alphas were substantially higher.

CHAPTER IV

Discussion

Extending the research on the PWT (Duffy et al., 2016) and administering the DWS measure (Duffy et. al., year), the purpose of this research was to psychometrically evaluate the DWS scale to English-speaking Indian employees. We first conducted a CFA on Indian working adults to confirm the scale's factor structure. We additionally ran an EFA to determine how many factors would be extracted. Additionally, we tested for discriminant and convergent validity.

The main findings of this dissertation emerge from the two main questions: Does the DWS scale in an Indian population also yield five factors as compared to Duffy (2017)? And, Is the DWS instrument invariant across countries (the United States and India)? A confirmatory factor analysis was conducted by examining four separate models: a unidimensional model, a

correlated factors model, a second-order model, and a bifactor model. Unfortunately, results indicated that for all four models, the factor loadings were concerning because we expect them to be in a uniform direction and with values greater than .5. After investigating the reverse-scored items and obtaining similar results, we ran a principal axis factor to determine how many factors would be extracted if we approached this in an exploratory way. The exploratory factor analysis yielded one interpretable component listed with the proportion of variance accounted for Factor 1 (43%). Therefore, since the CFA showed inadequate factor loadings and the EFA showed only factor compared to Duffy (2017) five factors, invariance testing was no longer appropriate.

Additionally, discriminant and predictive validity were examined. As hypothesized, for discriminant validity, job tenure had almost no significant association with the overall DWS score. Furthermore, as hypothesized, the overall DWS score was highly and significantly correlated with work meaning and had a medium correlation with job satisfaction. However, occupational fatigue had a strong positive correlation with the DWS score and a weak positive correlation with withdrawal intentions.

Two possible explanations for why the Indian sample may have provided different results than the United States sample are explored in the next section.

Reverse-Scored Items

First, the four reverse-scored items on the DWS instrument did not behave as intended. Reasons for this might include participants not thoroughly reading the questions, the four items were not comprehended the way they were intended to be comprehended (perhaps due to the questions being written in English), or the reverse-scored items did not have the same cultural meaning compared to the US population. Research has shown that using a mixed format of

positively and negatively worded items can create threats to the validity and reliability of the survey instrument (Chyung, 2018). Specifically, careless respondents may misunderstand negatively worded statements and provide erroneous data. Researchers recommend that positively and negatively worded items should not be included together. Alternatively, if positively and negatively worded items are included, respondents should be alerted to their presence when the survey is administered. For example, researchers can include "Please note that these answer statements are negatively worded." Furthermore, researchers can also report the negatively worded items separately (Chyung, 2018).

Translation

Second, perhaps translating the study to the participants' native language would have yielded different, more accurate results. For example, Byrne (2016) stated that it cannot be assumed that an assessment created in one country using a certain language will automatically measure the same way for a different country with a different language. "There may be language differences that change the meaning of certain items, cultural differences in targeted behaviors believed to represent an underlying construct, experiential differences in respondents' exposure to particular assessment scale formats, and the like" (pp. 52-53).

Indeed, all seven countries (not including the United Kingdom) that psychometrically evaluated the DWS measure and yielded similar results as Duffy (2017) had translated their measures before administering to the participants (Masdonati et. al., 2019; Ferreira et al., 2019; Di Fabio & Kenny, 2019; Nam & Kim, 2019; Buyukgoze-Kavas & Autin, 2019; Ribeiro, Teixeira, & Ambiel, 2019; Vignoli et al., 2019). The reasoning behind why we did not translate the item was that one of India's official languages was English. However, given the results of the

research, perhaps translating the scale to a more commonly used language such as Hindi would have provided more accurate results.

Cross-National Research Biases

In addition to translating the measure, Byrne (2016) also outlines several other considerations to ultimately produce the most reliable results for cross-national research. First, it is important to consider the structural and measurement equivalence of a construct. For example, a construct in one country may derive different social values in another country. Therefore, structural and measurement equivalence focuses on assessment scale structure with the concern being the extent to which it is operating equivalently across groups. For example, unlike in the United States, it is common practice for Indian adults to live with elderly parents and take care of them. Therefore, perhaps when they read the Free Time and Rest construct, they may include taking care of their elderly parents as part of their work activity. For that reason, it is important for researchers during the translation process, to be mindful of the social differences and the wording of the item so that measurement equivalence can be attained.

Second, sample bias is a concern in cross-national research; an incomparability of samples resulting from phenomena other than the target factors of interest (van de Vijver & Leung, 2011). Oftentimes this is derived from participants being recruited using convenience sampling. With convenience sampling, it is difficult to establish external validity since the data does not capture a nationally representative sample. Perhaps in the future, instead of using an online platform, researchers may consider traveling to India and having the participants answer the questions in person, targeting diverse cultures, industries, and demographics.

Third, instrument bias refers to the differential responses by comparative groups, to the structured item format. More specifically, respondents may not be familiar with the scale

formats. Byrne (2016) states that due to the unfamiliarity of the scaling format, the item scores can represent bias. In our study, we incorporated a variety of scale formats including the Likert scale, slider, and dropdown which may have caused confusion.

Lastly, item bias refers to distortions at the item level. According to Byrne (2016), items are said to be biased if they elicit differential meanings in their context across groups. For example, the items related to free time and rest may be valued and interpreted differently in India than they are in the United States.

In conclusion, providing the original DWS measure to English-speaking Indian workers did not work the way it was intended to. Perhaps closely translating the measure into their fluent language (e.g., Hindi) while taking into account the biases that Byrne (2016) laid out would have yielded more accurate results.

Limitations

MTurk Data

The primary limitation is the sampling method through MTurk. One recent article (Arditte et al., 2016) highlighted how MTurk samples may have elevated mental health concerns compared to the general population. This includes elevated levels of depression and anxiety. Therefore, perhaps our data does not accurately represent the country's answers based on the nation's general mental health. Furthermore, although it should have taken at least 10 minutes to thoroughly go through the survey, 50% of the participants answered the survey in under five minutes suggesting that participants were not answering the questions thoroughly.

Convergent Validity Measures

Another limitation to point out is that the measures that were used to measure convergent validity (JSS, WAMI, Withdrawal Intentions, and Occupational Fatigue) have not been evaluated

in an Indian context. Therefore, the issue of structural and measurement equivalence of the measures may have taken place, indicating that perhaps the measures used were perceived differently in an Indian context.

Research Implications

Since the English version of the DWS is not ready for ideal use in an English-speaking population in India, we have provided some suggestions for yielding more accurate results. The biggest future research implication is going through a translation process. Below, we have mapped out the translation process:

First, it is important that there are qualified translators who are competent in both languages, are familiar with both cultures, and have a sound grasp of item and test construction (Byrne, 2016). The *ITC Guidelines on Adapting Tests* (Sireci et. al., 2006) focus on a three-step process: (a) the instrument is translated from the source to the target language, (b) the translated instrument is translated back into the original language, and (c) the qualified team examines the three versions (i.e., original, target, and back-translated) and any discrepancies detected along the way.

Next, pilot-and-field testing is incorporated to identify any poorly functioning items thereby serving to pinpoint potentially biased items. To minimize these biases, cognitive interviews are put into place before or after the pilot testing. The purpose of this interview is to ensure that the items make sense to the participants, the items are applicable to the life contexts of all respondents, and the items are interpreted and understood the way they were intended (Byrne, 2016).

Third is the construct validation stage of adaptation. First, a CFA is conducted to validate the measure's hypothesized structure. Once that is established, the construct validity of the adapted instrument is analyzed and modified accordingly. Invariance testing then takes place to test whether the scale is equivalent across samples (Byrne, 2016).

The final phase of the adaptation process is to establish norms for the translated instrument in the country of its intended use. Norms provide information about the place of an individual score within a population of respondents to the same instrument. Therefore, norms allow the test giver to interpret an individual test score and is important for diagnosis or placement (Byrne, 2016).

Practical Implications

Although the instrument is not ready for the population in India, there is a need for one. Once the proper steps have been made (considerations taken by Byrne, 2016) and the instrument has established psychometric credibility, there is potential that a practical implication can include the DWS scale acting as a diagnostic test for an organization.

The ILO states that work should ideally be a place where employees feel safe, supported, and have their basic needs met (ILO, 2016). By having employees take this diagnostic test, organizations can determine whether they are providing their employees with the proper working conditions, access to health care, adequate compensation, hours that allow free time or rest, and complementing values. In fact, organizations may even add items inspired by the five factors. For example, under adequate compensation, employers may more specifically want to know what employees think of their stocks or end-of-year bonus. Or, under free time and rest, how do employees perceive their PTO policies and sick days? Based on the results, organizations will

know the root of the problem areas and adapt for better, more decent work experience. This can be especially helpful for organizations that employ people who are low-income and/or part of a marginalized group (predictors of decent work are economic constraints, marginalization, work violation, & career adaptability).

At a macro-level, governments and policymakers can employ this diagnostic test to measure people's decent work including adequate earnings, decent working time, and a safe working environment. Depending on the results, fair labor practices may be revisited, policies may be rewritten, and the right for collective bargaining and representation may be provided to reach decent work goals.

Conclusion

The purpose of this dissertation was to psychometrically validate the Decent Work Scale in an Indian population. Upon conducting a CFA, EFA, and assessing for validity and reliability, the scale was not successfully validated. Potential reasons for this include the administering of the decent work scale in English rather than a translated version (Byrne, 2016), the use of reverse-scored items, not accounting for possible cross-national research biases, and going through the Mturk platform to collect data. For future research, if proper steps have been taken, this scale can be helpful to organizations by acting as a diagnostic test. Organizations can measure the conditions of employees and adapt based on the results, towards a more successful atmosphere.

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