

THE DEVELOPMENT OF THE DEGREES OF FREEDOM SCALE

by

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ABSTRACT

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The Theory of Work Adjustment (TWA) is a person-environment fit model used to predict turnover intention, determined by the *satisfaction* of one's values being reinforced at work. A unique component of this framework looks at how one responds when work values are not being met: either by trying to change the outcome with the workplace or adjust oneself to the outcome. What is unknown however, are the factors that influence the different responses. There is evidence to suggest that there are objective external factors that might play a role in these decisions. This study aimed to capture these factors using an Exploratory Factor Analysis (EFA). Results showed a two-factor structure that partially supports the hypothesis that there are five external factors. Implications of these findings are discussed.

To my wife who has been a constant support,
and to my children who have no idea what was going on but hope they can still be proud

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Chapter 1: Introduction

Problem Statement

In light of the events involving the murders of George Floyd, Ahmaud Arbery, and Breonna Taylor in 2020, the inequality experienced by certain groups in the United States (U.S.) was once again in the spotlight. These murders caused an uproar in the communities across the country, with many calling for change to the justice system that disproportionately disadvantages certain populations. For example, Hispanic and Black Americans are disproportionately represented in the prison system making up the highest number of prisoners between 2008 and 2018 (Carson, 2020; Bureau of Justice Statistics (BJS), 2018); with Black individuals being incarcerated more than five times the rate of White people (Nellis, 2016). In addition, other systems that comprise the U.S. economic structure have also been shown to marginalize certain populations.

For example, in the healthcare system, racial and ethnic minorities have lesser access to healthcare services than their White counterpart, and those who do have access often do not receive the quality care they need (Riley, 2012). This has contributed to the greater susceptibility of these groups to catch Coronavirus (COVID-19) and other diseases. According to the Center for Disease Control and Prevention (CDC) (2020), COVID-19 related hospitalization rates are the highest for American Indian/Alaska Native and non-Hispanic Black individuals, closely followed by Hispanics. This inequality in healthcare accessibility and poor healthcare quality for racial minorities contributes to poorer health conditions, lower quality of life, and higher mortality rates (National Center of Health Statistics, 2016; Riley, 2012; Levine et al, 2001)

In the housing system, marginalized groups are experiencing similar barriers and discrimination. For example, racial and ethnic minorities, sexual minorities, and people with

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disabilities are disproportionately being denied affordable and quality housing. In addition, they are provided less information on housing options to make informed decisions and being showed fewer available homes than more affluent individuals and those who belong to the majority culture (Levy et al, 2017; Aranda, 2015; Turner, Herbig, Kaye, Fenderson, & Levy, 2005). The adverse effects of experiencing these discriminatory acts include the perpetuation of the wealth gap in the U.S. throughout multiple generations. Trying to narrow this gap from a marginalized standpoint proves more difficult because of the discrimination faced in the workplace across the employment system.

There is a clear wage gap between racial and ethnic minorities and White individuals. According to the Bureau of Labor Statistics (BLS) (2020), the median weekly earnings of full-time Black American workers and Hispanic workers are \$813 and \$785 respectively, compared to \$1,008 for White employees. In addition, between 1976 and 2016, the wage gap between Black and White male workers, actually increased (Daly, Hobijn, & Pedtke, 2017; Karageorge, 2017; BLS, 2013, 2014, 2015, 2016). Regarding those who identify with the LGBT community, until June 2020, there were no federal laws to protect sexual minorities and transgender persons from being fired from their job, simply because of their sexual orientation and gender identity. Before the Supreme Court ruled for the Civil Rights Act of 1964 to include sexual orientation and gender identity under the prohibition of sex discrimination, only 22 states had nondiscrimination laws on the basis of sexual orientation and gender identity, and one state on the basis of gender identity only (Equal Human Rights Campaign, 2020).

Women have also been marginalized in the workplace by way of representation in managerial positions or other positions of power (Johns, 2013). Women have occupied approximately 40% of managerial positions despite representing almost half (47%) of the

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workforce (BLS, 2019, 2016). Across the span of 10 years (2009 to 2019), the percentage of women represented in C-suite has not exceeded 30%, a very small percentage relative to the number of women who are employed (BLS, 2019). These sub-groups represent a long line of other marginalized groups (e.g. people with disability, older workers, immigrant workers) that have been disproportionately negatively impacted negatively by structural barriers in the workplace.

Relevant Literature

Much of the literature on these marginalized groups has focused on each sub-group separately, with very few studies exploring and understanding their collective experiences. Consequently, some of the existing studies have targeted issues specific to each marginalized sub-group, for example, women and motherhood (Marks & Houston, 2002), and some have been studied more than others; women and racial/ethnic minorities have received significantly more attention over the years, as opposed to older workers or individuals with disabilities. Despite the array of areas covered in the literature however, there are some common themes shared between the different studies. These include using such identities as predictor variables to different outcomes (Smith, 2019; Lin, 2018; Tatum, 2018; Strong & Zimmerman, 2005); testing certain models and scales (Brooks et al, 2020; Tokar & Kaut, 2018; Allan, Tebbe, Duffy, & Autin, 2015); and understanding how these identities interact with their work environment (Tiderington, Henwood, Padgett, & Tran Smith, 2019; McFadden & Crowley-Henry, 2018; Her, 2018). Though each of these contributes to our growing understanding of marginalized groups in the workplace, one very large gap in the literature remains - how they respond to work barriers and what factors motivate these responses. This knowledge can better inform career counselors on what values drive their clients' work ethic, and help clinicians understand possible coping

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strategies of their marginalized clients. This insight can also help organizations understand the experience of their employees, what actions they can take to identify those being marginalized, and what policies and changes in the workplace that need to be made in order to empower their overall workforce.

Theoretical Framework

The Theory of Work Adjustment (TWA) (Dawis, 2005; Dawis & Lofquist, 1984; Dawis, England & Lofquist, 1964), was derived from early research efforts of the Regional Rehabilitation Research Institute at the University of Minnesota. It was initially developed as a trait and factor matching model (Eggerth & Tinsley, 2008) and in the 1970's, it evolved into a developmental model that better describes the relationship between an individual and their workplace. The underlying philosophy of TWA postulates that organizations have requirements (e.g. job requirements) that need workers' abilities to fulfill, and in return, employees have values (e.g. achievement, comfort, status, altruism, safety, autonomy) they expect the organization to reinforce (Dawis, England & Lofquist, 1964). When the abilities and ability requirements match, *correspondence* is achieved, and the job performed is perceived as *satisfactory* by the employer. Similarly, when the organization meets an employee's values, this also results in a correspondence and the worker experiences *satisfaction* with his or her job (Swanson & Fouad, 2015; 2020).

When *discorrespondence* (when a worker's values are no longer reinforced by the organization) occurs, individuals then use one of the two adjustment styles in an effort to restore correspondence: *active* and *reactive adjustments*. Active adjustment is acting to change the work environment to bring about *correspondence* (Dawis, 2005). For example, a Black employee that is being paid less than a White colleague for doing the same work, could address the issue

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directly with his or her supervisor or employer. In contrast, reactive adjustment is when an employee acts to change themselves (Dawis, 2005). For example, a woman who has been passed on several promotions by others less qualified and/or less experienced than her could devalue how she views a promotion. TWA is a robust person- environment fit (P-E fit) theory, that can provide the framework to better understand how employees respond to issues at work.

Evidence of how TWA has been used to understand the responses of various groups to work-related outcomes, has been highlighted in a few studies. For example, Maximovitch (1998) used TWA to understand which adjustment strategy people would use when seeking to improve person-environment fit. Maximovitch (1998) hypothesized that those with high negative affectivity would use reactive adjustment, and those who view themselves as having more control than the environment would use an active adjustment. Maximovitch's (1998) findings using a sample of 46-mid career adults, did not support her hypotheses; with regards to the perceived control hypothesis, Maximovitch (1998) found the opposite effect to be true. That is, participants felt more in control to change themselves when they initiated the change. Similarly, they felt more in control to change the environment when the environment initiated the change.

One of the limitations to Maximovitch's (1998) study was the small sample size she used to test a new measure of active and reactive response modes and her hypotheses. The sample size of 46 participants may have been an adequate number to test the items of her new scale, but insufficient to test her hypotheses and establish strong measurement validity. Perhaps she might have been able to find evidence to support her hypotheses if these were achieved. In addition, the predictor variables (e.g. negative affectivity and a sense of control) were subjective and depended on the participants' perceptions of them. There was no consideration of external factors or even factors that may have been objective for her study. Furthermore, Maximovitch

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(1998) did not use a marginalized sample, whose marginalized status could have influenced the adjustment outcomes she predicted. Consequently, we cannot draw any conclusions that would suggest which adjustment styles marginalized populations would use.

In another study using TWA in an exploratory qualitative study, Eggerth & Flynn (2012) wanted to understand the experiences of Latino immigrant workers living in the U.S. 10 participants who identified as Latino immigrant workers were interviewed to discuss their work experiences both in the U.S. and in their home countries (e.g. Mexico, Peru, and Guatemala). Eggerth & Flynn (2012) found with this group, that there are external motivators such as basic survival needs, that keep them in a job that does not meet their intrinsic values or reinforcements. Building upon this work, Shtivelband (2014) wanted to understand how recent and non-recent Latino immigrant workers and American-born workers respond to Occupational Safety and Health (OSH) issues. Shtivelband (2014) defined recent Latino immigrant workers (RLIW) as those from Mexico or Central America who have been living in the U.S. for 2 years or less; “whereas, nonrecent Latino immigrant workers (NRLIW) represent Mexican or Central American immigrants who have lived in the U.S. for 5 years or more” (p. 13). Shtivelband (2014) found that RLIW and NRLIW were significantly more likely to utilize a reactive adjustment, compared to ABW. These findings were consistent to the findings in a similar study by Shtivelband, Eggerth, & Flynn (2013), who also were interested in understanding the differences in the work adjustment styles of Hispanic Immigrant Workers (HIW), non-recent Hispanic Immigrant Worker (NRHW), and American Born Workers (ABW) to OSH issues.

Why This Study?

A limitation common to Eggerth & Flynn (2012), Shtivelband, Eggerth, & Flynn (2013), and Shtivelband (2014) was using TWA to understand the experiences of Latino workers only

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and did not include other marginalized groups in their analyses. Though it is wonderful that we know the adjustment styles of Latino immigrant workers to safety issues at work, we cannot generalize these findings to other marginalized groups. It is possible that there could be within and between group differences should a broader sample of marginalized individuals be used. The outcomes of these studies however, particularly Eggerth & Flynn (2012), suggest there are factors external to work that could be influencing these decisions. These external factors that limit the ability to choose a particular response to reduce discordance, represents what Eggerth (2018) calls Degrees of Freedom (DoF).

Eggerth (2018) hypothesizes the existence of five factors that limit an individual's degrees of freedom to engage in active adjustment. These DoF include family obligation, job mobility, job demand, financial resources, and socio-political standing. Different from work volition (Duffy, Diemer, Perry, Laurenzi, & Torrey, 2012) which is a person's subjective view of their capacity to make career-related choices despite barriers and constraints (Autin, Douglass, Duffy, England, & Allan, 2017), DoF deals with objective barriers.

Family obligations is the level of responsibility one has to their family, influenced by law and/or family culture, that transcends beyond personal feelings or preferences. It refers to individuals who are obligated to provide for their families, for example a parent paying for child support. In addition, this also includes individuals upon whom other family members depend on for temporal support, for example a parent or child who is the breadwinner in the home. It is hypothesized by Eggerth (2018) that those who have a greater responsibility and obligation to provide for family members, are likely to have a lower degree of freedom at work to object or change certain outcomes. This is to avoid the likelihood of losing their job and means to provide for their families.

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Job demand relates to the skillset an individual has in the context of work. Those with limited skillsets, either due to the lack of education, work experience, or both, are not in high demand. When one lacks the skillset to be in demand, they have a low degree of freedom to choose how to respond to a work-related issue and will therefore be more likely to choose a reactive adjustment.

Job mobility refers to one's ability and freedom to move from job to job. Due to constraints provided by various factors such as family obligation or lack of financial resources, some individuals are limited to a specific geographic location in terms of work. Often a geographic area has limited opportunities for decent employment, therefore limiting ideal work choices and ability to quit to find other employment. The difficulty to uproot and move from one place to another lowers the degrees of freedom one has and would therefore likely influence a reactive adjustment.

Financial resources are as the name suggests. It refers to the level of financial securities one affords through the resources they have access to. Those in debt, for example a student with student loans or a first home buyer that now has a mortgage to pay, will have a lower degree of financial freedom. Similarly, someone who has just moved to the U.S. without an existing source of income will also have a low degree of financial freedom. Essentially, those who either are in debt, or do not have an existing source of income have low degree of financial freedom to engage in an active adjustment style.

Socio-political standing refers to the legal position of an individual. Those who are undocumented due to their immigration status for example have a low degree of freedom. As a result, they are likely to use a reactive adjustment because it is easier to adjust themselves than to make demands to their employers (Flynn, Eggerth, & Jacobson, 2015) for fear of being deported

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or losing their employment. People with a low degree of freedom because of their socio-political standing also includes those who have been incarcerated and those who have a legal case pending that could impede on their work circumstances.

Though being a member of a marginalized group or even having memberships to several of these groups, could influence the use of a particular adjustment style, it is hypothesized that the five external DoF factors mentioned above will determine the use of an active or reactive response, regardless of group membership. To date, no measure exists to capture these objective external factors. The purpose of this study is to develop the DoF scale, to determine if these factors indeed exist, and if they influence the use of reactive and active adjustment styles incorporated within TWA.

Chapter 2: Literature Review

Marginalized Groups & Work Barriers Literature

The following section reviews the existing literature on barriers impacting marginalized groups at work. Much of the literature on these marginalized groups has focused on each group separately, with very few studies exploring and understanding their collective experiences. Consequently, some of the existing research has targeted issues specific to each marginalized group (e.g., women at work and motherhood), and some groups have been studied more than others, (e.g., women and racial/ethnic in comparison to older workers and employees with disability). Despite the array of areas covered in the literature however, one thing is consistent, each marginalized group has been on the receiving end of discrimination in one form or another.

Despite the Title VII of the Civil Rights Act of 1964, which prohibits discrimination at work based on race, color, gender, religion, national origin, and other defining characteristics, unfair treatment of marginalized groups at work persists. A major contributor to these treatments is the structure in which they occur. Structural barriers in the workplace make it difficult for some people to obtain a job, advance to higher positions, achieve equal pay, and feel connected with colleagues in a meaningful way. While some barriers are unique to certain marginalized groups, there are also overarching themes that overlap between them. The following section will discuss these themes in greater detail.

This section will also review the literature on the theoretical framework that will be used for this study – The Theory of Work Adjustment (TWA) (Dawis, 2005; Dawis & Lofquist, 1984; Dawis, England & Lofquist, 1964). TWA provides a robust framework to help understand the different reactions employees can have to being marginalized and to the barriers they face. A thorough review of this literature, including the context and populations to which TWA has been

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applied, is important to ensure there were no overlaps between existing research and this study, and to affirm the contribution of this study to the literature.

Finally, given that the aim of this study was to create a scale for Eggerth's DoF (2018), it was only fitting that a review of the current literature on scale development is also included. Understanding this literature revealed best practices for developing and validating a new scale, particularly for a new concept such as DoF. As each body of literature is explored and discussed, Critiques to highlight the gaps that supports the need for the current study will also be provided throughout the literature review. One of the hopes in reviewing the literature on the different areas mentioned above is to determine how much of these relate to Eggerth's DoF (2018) and identify literature that lends support to this concept, as well as identify the gap this study can fill.

Stereotype

Stereotype, defined as *an overgeneralized belief or expectations about the qualities and characteristics of a category of people* (APA Dictionary) is one of the most common barriers marginalized groups encounter in the workplace. This theme has found its way in a number of different studies targeting multiple marginalized groups, including older workers, veterans, and women. Much of the research on this topic tend to focus on the accuracy of certain stereotypes on particular groups and individuals (Jussim, Crawford, & Rubinstein, 2015; Ng & Feldman, 2012), often ignoring a more important issue, the effects of these stereotypes on people's work experiences. Depending on what circulates the workplace, each stereotype appears to have a differing effect on various populations. For example, older workers have reported that being stereotyped as "lazy" or "disinterest in change" made it difficult for them to establish effective relationships with co-workers and managers, leading to difficulty maintaining work (Unson & Richardson, 2013); a task already challenging given the different dynamics of a more

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modernized workplace. Veterans have a different experience given the popular notion and stereotype associating them with posttraumatic stress disorder (PTSD) and other mental and medical conditions. The association of veterans with these health conditions because of combat experience is well documented.

Studies show that the prevalence of PTSD varies by service era (Eber et al, 2013; Tanielian & Jaycox, 2008). According to the U.S Department of Veterans Affairs, about 12% of those who served in the Gulf War have PTSD in a given year; approximately 30% of veterans from the Vietnam War were reported to have PTSD in their lifetime; and out of those who served in Operations Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF), about 11-20% have PTSD in a given year. However, even though the numbers are quite low relative to the total number that served in each war, the stereotype that “all veterans have PTSD” concerns employers (Loughran, 2014; Harrell & Berglass, 2012). As a result of this misunderstanding, perceived rating of “job-fit” from hiring managers are often poor, leading to high unemployment rates for this group (Stone, Lengnick-Hall, & Muldoon, 2018).

Women in the workplace experience a different kind of harm from this phenomenon. They are often kept from leadership positions because their qualities appear inconsistent with what “successful leaders” are perceived to possess. Some of these qualities include self-confidence, aggressiveness, competitiveness, and ambitious (Schein, 1975, 1973). Conversely, these attributes have been more commonly associated with men. These gender stereotypes not only keep women from advancing in their careers, but they also keep their male counterparts as the main occupants of those higher positions. When attempting to showcase characteristics that are in favor of men however, women are faced with a two-edged sword; not being able to express their true self at work in a leadership capacity (Felt, 2017), and being labeled as “too

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aggressive” or “too ambitious”. What is interesting about these perspectives, is that they are not only expressed by men, but by women also towards one another (Carli & Eagly, 2011). The combination of these gender stereotypes has been a barrier for women who aspire to positions with high pay and prestige (Sample, 2018; Ruble, Cohen, & Ruble, 1984).

Sexual Harassment

Another theme that emerged from the literature of marginalized groups at work is harassment, specifically sexual harassment. Defined *as unwanted sexual conduct* by the U.S. Equal Opportunity Commission (EOC), sexual harassment characterizes a lot of the experiences by certain minority groups, including women, those who identify as lesbian, gay, bisexual, or transgender (LGBT), and immigrant workers in different professions and on different levels of those organizations. For example, Asian American women managers in a qualitative study by Her (2018) reported that sexual harassment, alongside other forms of discrimination and microaggression, has been a major theme in their work experiences. Similarly, over 20% of women firefighters in a study by Hom, Stanley, Spencer-Thomas, & Joiner (2017) reported the same problem. Some even stated they have been victims of threats, which collectively, these issues have contributed to the development of suicidal ideation and severe psychiatric symptoms (Hom et al, 2017). This issue also trickles down to the most basic level of employment where even interns have reported that sexual harassment has been a hurdle for them in their professional development (Mozahem, Ghanem, Hamieh, & Shoujaa, 2019). This issue is compounded for women when factoring in other facets of their identity as a sexual minority.

This is evident in the Don't Ask, Don't Tell (DADT) military policy enacted in 1993 where questions about sexual orientation were forbidden during the enlisting screening process. What appeared to be a safe process for individuals identifying as members within the LGBTQ+

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community in the beginning was actually misleading as the consequences were severe at the later end. Sexual minorities were able to serve but that meant keeping quiet about their sexual orientation (Alford & Lee, 2016). Even though DADT allowed sexual minorities to enter military services, it did not protect them from threats of discharge if their orientation was discovered. This gave lesbians greater unwanted attention on two fronts: gender and sexual orientation. More than just women being impacted, this policy also offered no protection for transgender individuals.

Despite the repeal of DADT in 2010 to protect homosexuality, service members who identify as homosexual and transgender continued to be victims of sexual harassment and verbal abuse (Alford & Lee, 2016). As a consequence of the mistreatment, service members within the LGBTQ+ community perceived significantly lower unit cohesion and social support than non-LGBT service members (McNamara, 2020). This type of treatment has been consistent in other employment fields that are perceived to be male dominant. For example, in another study investigating the work experiences of sexual minorities in the construction industry, Denissen & Saguy (2014) found lesbian tradeswomen were sexualized by co-workers as a result of homophobia.

Another group known for their multiple marginalized group memberships are Hispanic workers. About half of Hispanic workers in the U.S. are immigrants (Bucknow, 2016) and many are undocumented. The racial and legal statuses of this group make them highly vulnerable to discrimination within the workplace. Due to their undocumented status, many managers and employers take advantage of these individuals, often abusing their rights by demanding they work additional hours at minimum pay, and sexually harass them, threatening to take legal actions if they did not comply (Moyce, S. C., & Schenker, M., 2018; de Castro, A. B., Fujishiro,

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K., Sweitzer, E., & Oliva, J., 2006). In an effort to cope with these problems, some Hispanic workers reframe how they appraise the harassment (Villegas, 2019; Welsh, Carr, MacQuarrie, & Huntley, 2006). Unfortunately, the problem persists instead of being addressed and consequently it leaks into other facets of these individuals' lives.

In a summary of 112 peer reviewed articles on Hispanic workers, Guererro & Posthuma (2014), found a negative relationship between sexual harassment and family issues. Hispanic workers are more likely to use informal resources (e.g. families, friends) and less likely to use formal organizational support and resources when dealing with work issues (Cortina, 2004). However, when work issues continue to be left unresolved, they compromise their informal support systems by taking out frustration on them (Guererro & Posthuma, 2014).

Lack of Promotion

Repeated throughout the literature, marginalized groups are also at a disadvantage when it comes to promotion at work. There is a clear distinction between those belonging and identifying with the dominant culture, and those who do not. For example, one of the consequences of being out as LGBTQ+ is a lack of promotion compared to heterosexual and cisgender employees (Eliason, Streed, & Henne, 2018). This is the result of not only the actions of peers and supervisors, but also because of exclusionary organizational and industry policies, values, and norms (Ozturk & Tatli, 2018), highlighting that the structural barriers argued in this study do exist.

Racial and ethnic minorities have also been found in the literature to suffer from this type of discrimination and it is prevalent across various industries (Bloch, Taylor, Church, & Buck, 2020). For example, the promotion rate for racial/ethnic minority faculty, at both the assistant and associate professor level in medical schools were lagging compared to White faculty, even

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though their representation in academic medicine has increased (Fang, Moy, Colburn, & Hurley, 2000). When looking at specific race/ethnicity, Black workers reported being discriminated against in terms of hiring and promotion in the STEM fields due to their race (Funk & Parker, 2018). In fact, not only are Black American employees less likely to be promoted or be promoted at a slower rate than White employees (Smith, 2005), they also experience downward mobility in a faster rate than their White colleagues, closely followed by Latinas (Wilson, 2009).

Women's experiences with promotion are no different. It appears that there is an institutional bias in favor of men for advancement, and their success is often attributed to their stable personal qualities whereas women's success is determined by unstable causes such as luck (Levine, Lin, Kern, Wright, & Carrese, 2011; Ruble, Coen, & Ruble, 1984). Women have occupied approximately 40% of managerial positions despite representing almost half (47%) of the workforce (Bureau of Labor Statistics (BLS), 2019, 2016). Across the span of 10 years (2009 to 2019), the percentage of women represented in C-suite has not exceeded 30%, a very small percentage relative to the number of women who are employed (BLS, 2019). The chances of success become narrower when women also identify with another marginalized group.

Yu (2020) found that Asian women are the least likely among all race/ethnic groups to become executive leaders, which appears to contradict the model minority belief that Asian Americans are well-positioned in their organizations despite holding a minority status. Comparing ten Asian subgroups with other major racial groups in the United States (U.S.), Yu (2020) found that the lack of promotion for Asians has a racial basis, and that the barrier to climbing the corporate ladder is tripled if they are a woman, and not born in the U.S.

The promotional disparity between marginalized and dominant groups is attributed to a number of different reasons. One is the stereotypes and attitudes that gatekeepers - individuals

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and groups who are directly involved in promoting (Mong & Roscigno, 2010) - have of these minority groups. For example, when referring to Black employees, gatekeepers spoke openly about them as being “lazy” or their belief that they do not work as hard as indicated by their attitude and the way they dress (Pager & Karafin, 2009; Kirschenman & Neckerman, 1991). Sometimes the stereotyping that prevents mobility for both women and racial/ethnic minorities is subtle and often guised in the use of soft skills criteria (Mong & Roscigno, 2010) or attributed to human capital (Wilson, 2009). Other times, the promotion gap between White men and their female and minority counterparts are largely a function of group differences in performance indicators which seems to be in favor of White men (Smith, 2005).

The stereotyping and negative attitudes reflect the lack of support these marginalized groups receive work in general. One of the issues reported by participants in a study by Shumate (2009) was the unsupportive and “negative managerial treatment” (p. 53). These participants also stated their integrity was questioned and were often not provided opportunities to defend themselves or explain their reasoning for certain behaviors. Conversely, their White colleagues did not receive the same treatment. In fact, the study participants reported their White colleagues received better treatment, for example swearing at their supervisors with no consequences (Shumate, 2009, p. 55-56). The lack of a supportive work environment has forced many Black American employees to believe they have to work more and work harder, to receive the same response from their higher-ups that their White colleagues experience through mediocre efforts (Shumate, 2009, p. 55; Smith, 2005).

The same theme of having an unsupportive work environment leading to the lack of promotion was reported by other Black Americans in different fields including the information technology (IT) and the military field. In a qualitative study by Jiles-Charles (2017), some Black

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Americans stated that they had to work longer hours and establish their own social networks to make up for the loss of support from their supervisors and employment teams. Similarly, in the military, Black American officers shared in a qualitative study by Lewis (2019) that their lack of support comes from limited exposure to Senior Leaders. They stated that this lack of interaction may explain why they are being overlooked for promotion (Lewis, 2019). One of the participants from the Lewis (2019) study calls this “white privilege” (p. 82).

This is a good example of cronyism that has been reported by Black Americans in a study by Chandler (2012), where certain individuals are advanced to positions of authority without regard for their achievements or qualification. Perhaps what adds to the frustration of these lived experiences is having their concerns misunderstood. White participants in a study by Hite (2004) perceived that all employees, irrespective of race, had equal access to promotion and support whereas the perception and experiences of Black workers were the opposite.

Another major reason for the disparity in promotion is attributed to the glass ceiling concept, a metaphor used to represent an invisible barrier that prevents certain groups from advancing in the workplace (Jefferson, 2019; Strange, 2018). Cotter, Hermsen, Ovadia, & Vanneman, (2001) argued that four criteria should exist in order to have evidence of the existence of a glass ceiling; 1) artificial barriers prevent the advancement of minority groups including women, 2) these barriers are more severe in higher positions, 3) it must be assessed using longitudinal studies, and 4) it must be manifested in increasing equality over time. Using data from a Panel Study of Income Dynamics from 1976-1993, Cotter et al (2001) found that a glass ceiling indeed exists for women. This finding was confirmed in a later study by Maume (2004), showing evidence to support two of the four criteria set out by Cotter et al (2001): criteria two and three.

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The results of the Maume (2004) study show that the gap in managerial attainment between White men and other groups (e.g., women and racial minorities) grew over the lifetime. Several other studies continue to show evidence of a glass ceiling existing, each presenting differing reasonings for its existence (Sample, 2018). For example, women were kept from promotion because they were perceived as less competent (Gluchman, 2014). In addition, women of color were kept from promotion because their education, knowledge, professional experience, and leadership skills were undermined (Goodnough, 2019). Workers identifying within the LGBTQ+ community also experience a similar barrier called the “lavender ceiling,” where much of the discrimination and microaggression against them mostly occurs (Moore, 2017).

Wage Disparity

Correlating the lack of promotion is a clear wage gap between minority groups and the dominant ones. According to BLS (2018), women who were full-time employees were paid a median weekly earnings of \$789 (on wages and salary). That is 81.1% of the \$973 median weekly earning for men (on wages and salary). The same wage gap also exists in a racial domain, where the median weekly earnings of full-time Black American workers and Hispanic workers are \$775 and \$722 respectively, compared to \$979 for White employees (BLS, 2020). In addition, between 1976 and 2016, the wage gap between Black and White male workers and Black and White female workers, never closed. In fact, the wage gap for Black and White male workers actually increased during this time frame (Daly, Hobijn, & Pedtke, 2017; Karageorge, 2017; BLS, 2013, 2014, 2015, 2016).

In another study looking at whether race/ethnicity is a factor in employment disparities after beginning treatment for substance use, Acevedo et al (2018) found that American Indian

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and Black clients had significantly shorter lengths of employment than their White counter-part, and on top of that, Black clients had significantly lower wages. The wage disparity between racial minorities and their White colleagues exists in various fields including nursing (Moore & Continelli, 2015), universities (Renzulli, Grant, Kathuria, 2006), and finance (Bielby, 2012). The same wage disparity has also been experienced by workers with disability (Gao, Schmidt, Gill, & Pratt, 2011) and LGBT employees (Ozturk & Tatli, 2018). These suggest and reinforce the continued existence of the “glass escalator” for White men and the “glass ceiling” for women and other racial minority workers (Casini, 2016).

What perpetuates these problems lies in the structure surrounding employment. In an effort to explain why the growing gap in pay exists for White and Black workers, economists use a Regression Analysis model. This model analyses observable factors that contribute to the pay disparity such as age, industry and occupation, part-time status, education level, and state. In addition, it also takes into account other factors that are much more difficult to measure but still contribute to this growing problem. Daly et al (2017) found that a significant reason for the wage gap is attributed to the different industries and occupations; that is Black and White workers work in different jobs. This however, explained about 9 percentage points of the annual gap for men and 5 percentage points for women. The second largest contributor to the wage gap is education level, explaining about 5 percentage points in annual gap for men and 2 percentage points for women in 1979 and 5 percentage points in 2016. The most alarming of their findings however, is that the majority of the variance between 1979 and 2016 is explained by factors outside the model – the unobservable factors which could include differences in school quality, job opportunities, and discrimination based on racial differences or skill level. The contributions of these unexplained variables grew from 8 percentage points for men in 1979 (accounting for

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over a third of the earnings gap) to 13 percentage points in 2016 (accounting for a little under a half of the earnings gap). Women also experienced a similar pattern with their gap increasing by more than triple the percentage points within the same time frame, again largely by factors outside the Regression Analysis model (Cajner, Radler, Ratner, & Vidangos, 2017; Wilson & Rodgers III, 2016).

Other examples of systemic barriers are reflected in certain laws and changes made on a federal level. For example, on July 5, 1935, President Franklin Roosevelt signed into law the National Labor Relations Act, also known as the Wagner Act (1935). This law prohibited five unfair labor practices which include interfering with, restraining or coercing employees in the exercise of their rights, controlling or interfering with the creation or administration of a labor organization, discriminating against employees to discourage or encourage support for a labor organization, discriminating against (e.g. firing) employees who file charges or give testimony under the Wagner Act, and refusing to bargain collectively with representatives of employees. What appears to be a noble act to ensure equality and justice for all employees actually did not benefit agriculture and domestic jobs which at the time, were disproportionately made up of people of color, particularly Black Americans (Solomon, Maxwell, & Castro, 2019).

In addition, about one year after the establishment of Title VII of the Civil Rights Act of 1964, the Equal Employment Opportunities Commission (EEOC) was developed. The EEOC was created to enforce federal laws that make it illegal for employers to discriminate against their employees based on race, color, religion, sex, age, national origin, and disability. Until recently, sexual minorities were not protected by these laws, making them vulnerable for discrimination. In addition, Congress has not increased the EEOC's budget between 1980-2018 and has actually decreased the number of employees responsible for carrying out the agency's

mission (Solomon, Maxwell, & Castro, 2019). Recently, former President Donald Trump's proposed budget for the 2019 fiscal year would decrease the EEOC's budget by \$23.7 million. The lack of support from the government means marginalized groups who often file complaints for being discriminated against, would have an increasingly difficult time seeing any resolution to issues they report.

Responding to Barriers Literature

The literature on how marginalized groups in society respond to adversity, harassment, and discriminatory barriers is very limited. The literature on how these groups respond to the same issues in the workplace, is even more limited. We learn however from a few existing studies that the responses vary. For example, Levine et al (2011) found that women physicians opt to leave their jobs. This has been found to be the case in other studies involving professional women in other fields (Ellinas, Fouad, Byars-Winston, 2018; VanTuyle & Watkins, 2009). The decision to leave work due to barriers is consistent with the TWA framework, as a result of not being able to restore *correspondence*, though Levine et al (2011) did not explicitly state this. In fact, one of the limitations to the Levine et al (2011) study is the lack of a theoretical framework in which they conceptualized their research and findings.

Another response to harassment is confronting those who are responsible for the offense (Stockdale, 1998). Unfortunately, those who take this approach experience more harassment and worse job outcomes than those who did not use this response style (Stockdale, 1998). For others, certain attempts were made to restore good relations with coworkers that did the offense (Dennisen, 2010). When these efforts failed to produce the desired results, however, victims of harassment changed how they viewed and interpreted the harassment, and opted to use informal support, perceiving there were greater constraints in using formal measures (Dennisen, 2010). In

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another study seeking to understand how older workers respond to harassment, we learn that different individuals belonging to the same demographic group, use different approaches to respond. For example, in a sample of 24 participants, 45.8% of them said they told a co-worker about the issue, 8.3% said they told a family member or friend, and 37.5% said they told no one about it. Out of all these participants, 33.3% of them said they told a boss (Blackstone, 2013).

These studies help us better understand the different response styles marginalized individuals use when faced with harassment. Using TWA terminology, these studies show that both *active and reactive adjustments* are employed, though not explicitly stated by the researchers. This body of literature also shows that both adjustment styles are used together, with active adjustment being the initial approach by some, followed by a reactive one when active adjustment does not work as found in the Dennisen (2010) study. Unfortunately, we do not know if the same adjustment styles are used with other barriers such as pay inequality or promotion disparity. This continues to be a gap in the literature.

Another limitation to the small “response” literature available is that the factors (if any) that influence these individuals to respond in the way they did, are not identified. Research on these factors and factors relating to the DoF categories is scarce. There are studies focusing on work-family relationship and responsibilities and its impact on work (Juratovac & Zauszniewski, 2013; King, Huffman, & Peddie, 2013; Florian, 2018), financial constraints, lack of education and opportunities (Albright et al, 2018; McLeod, 2018) and job demand (Fraade-Blanar, Sears, Chan, Thompson, Crane, & Ebel, 2017; Wang, Johnson, Nguyen, Goodwin, & Groth, 2019). “Job mobility” in the literature refers to promotion and advancement within the workplace (Wang, 2019; Smith, 2005), and is not consistent with the DoF definition of having the flexibility to move from one job to another. Finally, with regards to sociopolitical standing, very limited

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research has looked at this concept, particularly from the perspective of combining multiple factors such as being an undocumented worker or have a history of incarceration with other marginalized identities. However, none of these studies addresses the question of whether or not these factors influence an active or reactive adjustment. As a result, we continue to lack knowledge and insight in this area.

TWA Literature

A review of the literature on the Theory of Work Adjustment (TWA) reveals a very interesting pattern of how this theory has been used in research since its inception (Dawis, England & Lofquist, 1964). TWA was derived from early research efforts of the Regional Rehabilitation Research Institute at the University of Minnesota. It was initially developed as a trait and factor matching model (Eggerth, 2008) and in the 1970's, it evolved into a developmental model that better describes the relationship between an individual and their workplace. The underlying philosophy of TWA postulates that organizations have requirements (e.g., job requirements) that need workers' abilities to fulfill, and in return, employees have values (e.g. achievement, comfort, status, altruism, safety, autonomy) they expect the organization to reinforce (Dawis et al, 1964). When the abilities and ability requirements match, correspondence is achieved, and the job performed is perceived as "satisfactory" by the employer. Similarly, when the organization meets an employee's values, this also results in a correspondence and the worker experiences "satisfaction" with his or her job (Swanson & Fouad, 2015; 2019).

According to TWA, efforts are made to restore equilibrium when certain values are not being met, through different adjustment styles. Active adjustment is acting to change the work environment to bring about correspondence (Dawis, 2005), for example addressing the issue of pay disparity directly with a supervisor or employer. Reactive adjustment is when an employee acts to change themselves (Dawis, 2005), for example devaluing how they view a promotion. In the case that correspondence is not achieved during the adjustment period, quitting the job is the next step in the process.

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TWA Expansion Literature

TWA received much attention over the years with its application in various studies, peaking in the 1900's and in the early 21st century, before experiencing a steady decline in its use since, perhaps due to its lack of concept precision (Morrow, 1993). The pattern that the literature shows in how TWA has been used over the years is broken down into three categories. The first category is titled "TWA Expansion," which consists of scholarly efforts to improve and expand the theory, incorporating findings from other research such as personality theory (Bizot, 1993). Much of this work was done in the 1960's before taking a long pause and then surfacing again in the 1990's literature. In the early studies looking to expand TWA, much of the debate was about refining and strengthening the theory's psychometric measures (Weiss, Dawis, & Lofquist, 1966; Betz, Weiss, Dawis, England, & Lofquist, 1966). As the TWA psychometrics measure improved, the expansion work began to incorporate elements found in other studies. For example, Dawis & Lofquist (1978) found the need to add the Abilities and Abilities Requirements constructs to improve the theory. Further, Tinsley (1993) argued the need to add other concepts such as cognitive processes and enabling factors such as family situation and ethnicity to further strengthen the theory. Around the same time, Bizot (1993) suggested the consideration of the nonwork environment to better measure correspondence, in addition to personality theory. Years later, additional research began focusing again on refining the concepts of the theory as it stood at the time (Eggerth, 1998; Maximovitch, 1997).

TWA and Model Testing Literature

Another theme emerging in the literature is categorized in what is called "TWA Model Testing," which is comprised of studies focusing on testing the validity and reliability of the theory's core concepts, particularly its ability to predict work satisfaction and turnover

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intentions. Various populations were used for this. For example, Dahling & Librizzi (2014) wanted to test whether TWA can predict turnover intentions among 131 working adults. They found that the need-supply (N-S) fit of TWA was positively related to job satisfaction and that job satisfaction mediated the relationship between N-S fit and job turnover intentions (Dahling & Librizzi, 2014). Similarly, Lyons, Brenner, & Fassinger (2005) wanted to test the same predictive model of TWA with Lesbian, Gay, and Bisexually-identified (LGB) employees; again, they found the model to hold; Velez & Moradi (2012) using the same population in their study found the same results. In addition, TWA's predictive model of tenure also showed promising results (Bretz & Judge, 1994). Findings from a study by Melchiori & Church (1997) also found that TWA's needs/values construct was consistent with the needs/values of workers with mental retardation. The recurring theme with all of these studies is that TWA is a robust theoretical framework that has endured the test of time with various populations.

One major limitation to this body of literature is the limited way they have utilized the TWA model. These studies have tested only one component of the model, ignoring other key concepts such as the adjustment styles of employees to certain work outcomes. There was also no reference to the flexibility levels of employees or these populations, to test how long they stay in this phase with reported challenges, before moving into the adjustment phase. This highlights the gap in the literature that this present study is looking to fill.

TWA Applied Literature

The third category in this body of literature, is the actual implementation of TWA in an effort to understand the relationships between various factors and concepts for different populations. Very few research using TWA has focused on individuals of color as noted by Swanson & Fouad (2019). A notable study using a racial minority sample was conducted by

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Shtivelband (2013) that looked to compare the adjustment styles of American born workers (ABW), recent Latino immigrant workers (RLIW) who have been in the United States (U.S.) for two years or less, and non-recent Latino immigrant workers (NRLIW) who have lived in the U.S. for five years or more, in relation to safety issues at work. They found that both RLIW and NRLIW were more likely to use a reactive adjustment style when confronted with safety issues, than those who were born in the U.S. Shtivelband (2013) suggests that a possible reason for this is because they are more likely to persevere when dissatisfied at work. This study is evidence that there is a gap in knowing and understanding external factors that could be influencing response behaviors; factors that might be captured in Eggerth's DoF (2018).

Outside the very limited research on people of color, much of what is available in this body of literature tend to focus on psychological and medical wellbeing, and how individuals with these types of conditions have adjusted to either continue working or returning to work. Adding to the psychological domain of this literature, much of the research has been developed for clinical application purposes; they are used to provide insights for counselors to more effectively work with and treat individuals with these types of disorders. For example, Fogarty & Beck (1995) tried to understand how counselors can help those with PTSD transition back to work, Withrow & Shoffner (2006) were interested in helping individuals with Anorexia Nervosa symptoms, and Dahlbeck & Lease (2010) wanted counselors to know how to work with people living with HIV/AIDS.

Though it is important to be familiar with the challenges these populations experience at work and transitioning back to work for the purpose of counseling treatment, we do not fully understand the adjustment styles these individuals have to their situation. Similar to the critique of the "testing" literature, the TWA model is underutilized.

Scale Development Literature

This section of the literature review covers several articles and studies on scale development, to identify and highlight best practices to be implemented in the current research. This section includes articles that have reviewed multiple scale validation studies to gain an overview of what steps are necessary and understand recommendations on best practices for developing a new measure. The format of this section is broken into the different stages of scale development (e.g. exploratory factor analysis and confirmatory factor analysis) as outlined by meta-analyses.

The Outline

In a review of multiple scale development studies, Worthington & Whittaker (2006) outlined best practices in developing and validating a new measure. In their review of the literature, 23 articles were included based on two criteria. Firstly, only new scales were considered, excluding follow up studies where only the reliability, validity, or revision of existing scales were investigated. Secondly, only articles that reported Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) were included (Worthington & Whittaker, 2006). Following DeVellis (2003) findings, Worthington & Whittaker (2006) stated that a new scale development study should also include the following steps: clearly define what is to be studied, generate an item pool, determine the format of the measure (e.g. Likert-scale), have experts review the items pool, consider inclusion of validation items, administer items to a development sample, evaluate items, and optimize scale length (Worthington & Whittaker, 2006, p. 813). Other researchers have added more details to this process by including other steps such as the purpose of the scale (e.g., whether it is used for research or selection development, general population or specific population), sample size (Tay & Jebb, 2016), item reduction analysis,

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extraction factors, and fit indices (Boateng, Neilands, Frongillo, Melgar-Quiñonez, & Young, 2018).

Define the Construct

Providing a clear definition of the construct being measured is an essential step in scale development. It helps structure efforts in the steps that follows. Worthington & Whittaker (2006) stated that early mistakes in scale development can lead to later problems in the process (p.811). Defining the construct may appear simple, but there are a number of components to consider in this stage. For example, Tay & Jebb (2016) stated that the conceptual breadth of the construct must be understood to have a better idea of the items to generate. For example, a measure that assesses satisfaction in general may require different types of items from a measure that assesses satisfaction at work or in a marriage (Tay & Jebb, 2006). In addition, specifying the number of dimensions in the construct is also important. This determines whether the construct is made of a single variable or multiple variables.

Generate Item Pool

Deciding on the format of the items is an important part of the item generation stage. There are a number of different formats available and determining which to use is dependent largely on the outcome the measure is designed to achieve. For example, a Likert scale is typically used to assess to what extent participants agree or disagree on a phrase. The choice options can vary from 3 to 7 depending on the variance the researcher is trying to capture. Similarly, there are semantic differential scales in which the subjective views of the participants on certain issues are required (Friborg, Martinussen, & Rosenvinge, 2006). Then there are other options such as dichotomous questions (e.g., yes/no or true/false) and multiple-choice questions.

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Each format comes with its own advantages and disadvantages, for example, some questions require greater comprehension abilities while others take longer to answer. Once the item formatting is decided on, generating the actual items follows. The items are designed to “tap the construct” (Worthington & Whittaker, 2006, p. 813). Ultimately, the objective of this stage is to generate items that reflects the construct or constructs (if multiple) being measured. Generating the items can be done through a deductive or inductive method (Hinkin, 1995). A deductive method is based on the domain of interest when its conceptualization is already known (Tay & Jebb, 2006). This can be done through literature review of that domain or using existing measures of the domain of interest (Hinkin, 1995). An inductive approach is used when there is uncertainty about the definition of the construct (Tay & Jebb, 2006). It involves the generation of items from qualitative data through exploratory research methods (Boateng et al, 2018). Worthington & Whittaker (2006) recommends that items should be clear and concise and should reflect the scale’s purpose. Poorly worded items will result in poor psychometric properties of the measure (Ford & Scandura, 2007).

Expert Feedback

Expert feedback is given by one or more groups of “experts” on the subject (Worthington & Whittaker, 2006) and it is commonly used to establish the content validity of a scale (Boateng et al, 2018). Experts are those who are knowledgeable about the domain of interest which could include professionals, or users of the scale (e.g., target population judges) (DeVellis, 2017). The number of experts used varies, but typically ranges from 5 to 7 (Haynes, Richard, & Kubany, 1995). The expert feedback provided should, at minimum, include the following: evaluate whether items are clearly written and easy to understand, concise, grammatically correct, at a reading level consistent with the reading ability of the target population, not redundant, and

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reflect the construct of interest (Boateng et al, 2018; DeVellis, 2017; Worthington & Whittaker, 2006). The items generated in this stage typically reflect 3 to 4 times the size of items that will eventually comprise the final scale (Worthington & Whittaker, 2006).

Introducing EFA and CFA

Worthington & Whittaker (2006) in their review of the literature on best practices for scale development, found that Confirmatory Factor Analysis (CFA) typically follows an Exploratory Factor Analysis (EFA). Worthington & Whittaker (2006) also found that it is unnecessary to run an EFA followed by a CFA and then another CFA; doing so will cause validity issues. Both EFA and CFA serve different purposes and are comprised of different procedures. EFA is a procedure used to explore the underlying factor structure of a set of items without a preconceived structure on the outcome (Child, 1990). A CFA on the other hand, is a technique used to confirm the factor structure established in the EFA process (Morin, Arens, & Marsh, 2016). The processes of these analyses are much more complex than simply stating what their purposes are. The following will outline the steps involved in each process.

EFA Study

Sample Size

There are mixed opinions on what the appropriate sample size is for testing a scale. MacCullum, Widaman, Zhang, & Hong (1999) stated that the sample size is dependent on the level of variation between the variables, and the level of over-determination of factors (e.g., the ratio of variables to factors). Gorsuch (2003) proposed that minimum ratios for participants to items be used (e.g., 5:1 or 10:1). Several other studies suggest a range for a sample size to be between 10 and 30 participants for a pilot study (Isaac & Michael, 1995; Hill & Hamilton, 1998).

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van Belle (2008) suggested a pilot sample of 12 in the context of a medical study; Julious (2005) suggested the same amount. The benefits of having a small sample includes simplicity and easy calculations yet the hypothesis is still able to be tested (Isaac & Michael, 1995). In terms of instrument development, Hertzog (2008), recommended 25 to 40 participants for a pilot study. Johanson & Brooks (2010) stated that “larger samples are always better” (p. 399) and also recommends a minimum of 30 participants for a scale development pilot study. The benefit of larger samples includes minimized measurement error, stable factor loadings, and replicable factors (MacCullum et al, 1999). For best practice, Worthington & Whittaker (2006) suggests that a sample size of 150-200 to be adequate and a sample of at least 300 to be sufficient.

Factorability of the Correlation Matrix

Factorability refers to the assumption that there is some correlation in the variables so that factors can be identified. Two commonly used methods to test this assumption are Bartlett’s test of sphericity or Kaiser-Meyer-Olkin (KMO). Bartlett’s test is used to determine if there is a redundancy between variables that can be summarized with fewer factors, eliminating the probability that correlations in a matrix is 0 (Worthington & Whittaker, 2006). Bartlett’s test should be significant at a probability of .05 or less (Pett, Lackey, & Sullivan, 2003). One limitation to this method is its sensitivity to the sample size; it is likely to be significant for larger sample sizes (Worthington & Whittaker, 2006). The other method used for factorability is Kaiser-Meyer-Olkin (KMO). KMO is used to determine the extent to which a correlation matrix actually contains correlations between small subset of variables (Worthington & Whittaker, 2006). A KMO value of .60 or higher is recommended before proceeding with a factor analysis (Pett, et al, 2003).

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Rotation Methods

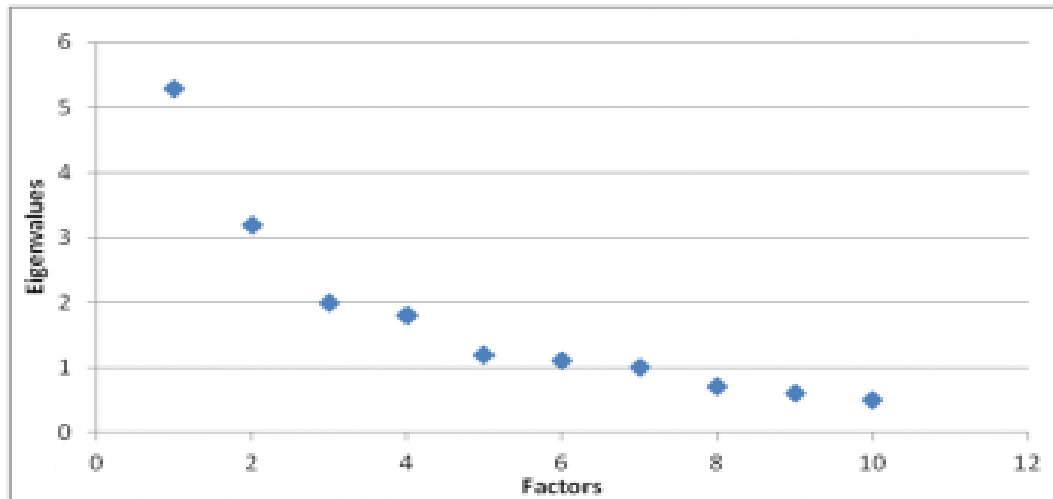
Factor analysis rotation methods is used to rotate the factors to achieve a simple structure (Bryant & Yarnold, 1995). There are two types of rotation methods: orthogonal and oblique (Brown, 2009; Worthington & Whittaker, 2006). An orthogonal rotation is kept at a 90-degree angle, and it is used when the factors in a set of items are assumed to be uncorrelated. By contrast, an oblique rotation is used when these factors are assumed to be correlated, and the rotation are not kept at a 90-degree angle (Suhr, 2006).

Factor Retention

According to Worthington & Whittaker (2006), there are a number of different ways researchers can use to estimate and reduce the number of factors, and consequently the number of items. The most common of these methods is based on eigenvalues recommended by Kaiser (1958) and Cattell (1966). An eigenvalue is a measure of how much of the variance of the observed variable is explained by a factor (Santor et al, 2011). In an analysis output, factors are displayed in order from the highest to lowest eigenvalues, with each additional factor producing lower and lower eigenvalues. Any eigenvalue that is less than 1 is considered unstable and should be removed (Samuels, 2017; Kaiser, 1958).

Another method commonly used to determine how many factors should be retained is through the use of a scree plot. With the frequent use of software to analyze these values, using a scree plot is a matter of observing where the curve of the slope is clearly leveling off. The example below demonstrates that an eigenvalue of 1 or more are associated with 7 factors, eliminating factors 8, 9, and 10.

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Item Retention/Deletion

Item deletion is a common and expected part of the scale development process. In addition to using the factor retention methods to reduce items, there are also ways to eliminate items directly. Two of the most common methods are using cross-loading and factor loading. Cross-loading is when an item loads on to more than one factor and should be considered for deletion (Worthington & Whittaker, 2006). Worthington & Whittaker (2006) also cautioned not to delete items based on cross-loadings before the final factor solution is established, as items that cross-load highly can be retained if one factor is deleted, and it loads highly still on the remaining factors.

Factor loading on the other hand is a correlation between an item and a factor (Miller-Carpenter, 2018). Factor loading of 0.3 or more indicates moderate correlation (Tavakol & Wetzel, 2020). However, Cronbach's alpha is used to measure factor loadings to determine if items should be deleted or retained. There are varied opinions on what the cutoff scores should be with many researchers suggesting .70 as an "acceptable" score (Hair, Black, Babin, & Anderson, 2010; George & Mallery, 2003) based on Nunnally's (1978) work. Nunnally (1978)

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however suggested that a Cronbach's alpha score of .70 is appropriate for the early stages of research (e.g. exploratory) but higher scores should be used for basic and applied research.

CFA Study

Sample Size

Several studies have recommended different sample sizes for a follow up study. For example, Clark & Watson (1995) recommended an N=300 after the initial pre-test. This number is also recommended by Tay & Jebb (2016). Guadagnoli & Velicer (1988) suggested a range between 200 and 300 as appropriate for a factor analysis. Comrey & Lee (1992), using a graded scale suggested that a sample of 300 participants is *good*, 500 participants is *very good*, and 1000 plus is an *excellent* sample size. Worthington & Whittaker's (2006) recommendation for best practice is to account for the number of parameters, suggesting a 5:1 to 10:1 ratio of participants to the number of parameters (Bentler & Chou, 1987).

Fit Indices

Fit indices are used to analyze the model fit between the data and the hypothesized model, factoring the degrees of error in the analysis. There are a number of fit indices researchers use, each serving a certain purpose. Worthington & Whittaker (2006) found that a chi-squared test has commonly been used in this stage of the scale development. However, a chi-square is overly sensitive to the sample size (Bentler & Bonnett, 1980), with bigger sample sizes resulting in significant outcomes. Other fit indices include Standardized Root Mean Square Residual (SRMR), Weighted Root Mean Square Residual (WRMR), Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA), and Tucker Lewis Index (TLI).

SRMR is a measure of the difference between the observed and predicted correlations (Boateng et al, 2018). The recommended acceptable threshold score is .08 or less (Hu & Bentler,

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1999; Tucker & Lewis, 1973). WRMR is most suitable for models with binary and ordinal data (Cook, Kallen, & Amtmann, 2009). The recommended cutoff score is 1.0 or less (Yu, 2002). CFI is used to measure if a new scale has a better fit over a baseline model with a cutoff score of .95 or higher (Tucker & Lewis, 1973). RMSEA is a fit index used to estimate the discrepancy between the model and population covariance matrix (Xia & Yang, 2019). Cook et al (2009) recommended a cutoff score of .06 or less for RMSEA. Finally, TLI is used when comparing a new measure with an existing model that have no relationships among the items (Boateng et al, 2018). Hu & Bentler (1999) suggests that TLI with overall fit indices of .95 or higher are considered adequate.

Chapter 3: Methods

The purpose of this study is to develop the Degrees of Freedom (DoF) scale to determine if there are external factors that influence the use of reactive and active adjustment styles incorporated within TWA. This chapter outlines the methodology procedure of how items for the DoF scale were developed and refined. It also discusses how participants were recruited for the pilot study and second study as well as highlight the demographic make-up of these participants.

Item Generation

Items were generated based on recommendations from experts in the TWA literature and individuals who were familiar with the literature on factors related to the different DoF concepts: family obligation, job mobility, financial resources, job demand, and social political standing (the definition of each of these is included in chapter 1). Following recommendations, the initial items were developed to reflect each DoF factor. A total of 10, 10, 11, 9, and 11 items were initially developed for family obligation, job demand, job mobility, financial resources, and socio-political standing respectively (see table 1). This was consistent with Tay & Jebb's (2016) recommendation for an initial item pool of 45 to 60 (9 to 12 per factor).

Content Validity

Once the items were generated, they were sent out to experts on literature pertaining to TWA and factors relating to the DoF concepts for feedback. Feedback given emphasized the need to incorporate wording that describes different adjustments to work situations. Based on the feedback provided, some items were deleted and replaced, others were kept and refined leaving 51 total items. This process of involving expert feedback established the content validity for the items used in the pilot and second studies, which were approved by the Institutional Review Board (IRB) at the University of Wisconsin-Milwaukee (UWM).

Pilot Study

Procedure

The sample for the pilot study was selected using a convenience sampling method. Participants were college students who were enrolled in the EDPSYCH 101, 110, 212, and COUN 403 courses at the University of Wisconsin-Milwaukee. These courses were developed to help students choose their major and learn how to use the skills they developed in their major in a work setting. The use of students, in this step of the scale development process is common given they have had some experience with reading and writing articles (Colquitt, Sabey, Rodell, & Hill, (2019). Further, Eby, Durley, Evans, & Ragins (2008) stated that college students are appropriate samples for this stage of the validation process because it only requires “judgment of item content and this sample has the intellectual capacity to read task statements and categorize them into pre-defined categories” (p. 360).

An email was sent out to course instructors one week into the Spring 2021 semester, explaining the purpose of this study and invited them to participate. Instructors who accepted the invitation to participate were asked to relay the purpose of the study to their students to gauge interest. Those whose students showed interest in this study were sent via a follow-up email, the instructions on how their students can access the survey using the Qualtrics survey link provided. The purpose of the study and the consent form were included in the survey link.

Participants were incentivized using extra credit that were added on to their final grade at the end of the semester. Students were informed they could withdraw from the study at any time. Those who were interested in the study but did not consent after reviewing the purpose of the study, did not have access to the content of the survey. At the end of the survey, participants were asked to provide feedback on the survey items (e.g., clarity, wording) and survey length.

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This feedback was helpful in the item elimination process. The survey was kept open throughout the course of the semester and participants were provided with the principal researcher's contact details, so they could reach out with any questions or concerns.

Data Cleaning

Once the desired N was obtained, the data cleaning process began by correctly labeling each variable of the dataset, including any demographic variables (e.g., race/ethnicity, gender, age, sexual orientation, relationship status, employment status, etc.) using SPSS. This was important because it helped identify missing data and the patterns in which they were missing e.g., Missing at Random Data (MAR), Missing Completely at Random Data (MCAR), and Missing Not at Random (MNAR) (Enders, 2010). A total of 170 responses were collected over the space of a semester (approximately 3 months). Out of the 170 responses, 59 cases were deleted because they either did not meet the inclusion criteria for the study (being 18 years or over AND be employed full-time or part-time in an organization that is not theirs) or had a significant number of items left unanswered, leaving 111 responses. After running a Little's Missing data test, no missing data was reported for the remaining 111 responses.

The data cleaning process also prompted another evaluation of the items in each of the DoF categories before the second study was initiated. A critical review of the items revealed that the items only related to the DoF but did not reflect the different adjustment styles (active/reactive). Items were updated to better capture the interaction between the DoF factors and the two adjustment styles. As a result, items for Family Obligation, Job Demand, Job Mobility, Financial Resources, and Socio-political Standing were reduced to 10, 8, 8, 8, 8 respectively.

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Participants

Of the 111 remaining cases, 21.6% (n=24) were male and 78.4% (n=87) were female. In terms of age, 58.6% (n=65) were between 18-24, 23.4% (n=26) were between 25-30, 9% (n=10) between 31-34, 2.7% (n=3) between 35-40, 1.8% (n=2) between 41-44, 1.8% (n=2) between 45-50, 1.8% (n=2) between 55-60, and 0.9% (n=1) fell in the 65+ range. The majority of the cases also identified as Caucasian/White at 82.9% (n=92). The next biggest ethnic/racial group were participants who identified as “Other” at 6.3% (n=7); this group were comprised of individuals who identified as “multi-racial” or “Asian”. Participants who identified as Hispanic/Latino made up the third biggest group at 4.5% (n=5), closely followed by African/Black American at 3.6% (n=4), Native American at 1.8% (n=2), and Native Hawaiian or other PI at 0.9% (n=1). In terms of sexual orientation, the majority of participants identified as Heterosexual at 75.7% (n=84) followed by those who identified as Bi-sexual making up 14.4% (n=16) of the sample. Those who identified as Lesbian, Gay, Asexual, and Other made up 4.5% (n=5), 2.7% (n=3), 0.9% (n=1), and 0.9% (n=1) of the sample respectively. 1 participant (0.9%) preferred not to disclose their sexual orientation. Most of the participants worked part-time, making up 70.3% (n=78) of the sample with the remaining participants (n=33) disclosing they work full-time (see Table 2).

Study 2

Procedure

The DoF survey for study 2 was created on Qualtrics and was comprised of 42 items in a 5-point Likert-scale format (see Table 3). The Qualtrics survey link was posted on Amazon Turk (MTurk) for a week to recruit participants using the same inclusion criteria used in the pilot study (18 years or over and work part-time or full-time in an organization that is not their own business). MTurk is an online platform that provides respondents to participate in a number of

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different online research studies. MTurk collects various information about their respondents and based on the inclusion criteria of a study, those who qualify based on the information they provided will be sent the link to that study to participate in.

For this study, participants were paid \$1.50 for completing a 15-minute survey. The consent form, accessible using the Qualtrics survey link, was included with the survey. All participants were informed they could leave the survey at any time without any consequences to them. They were also informed on the purpose of the study and how the information they provided will be used. Those who consented to participate in the study were taken to the demographic page and from there to the rest of the survey.

Data Cleaning

A total of 518 responses were collected in the space of seven days. Similar to the cleaning process for the pilot study, cases that did not meet inclusion criteria or did not complete most of the survey were deleted, leaving 272 responses for analysis. A Little's Missing data test was also run and found no missing data for the remaining 272 responses. Power for analysis was adequate based on Costello & Osborne (2005) recommendation of 5-10 responses per item.

Participants

The demographics information collected included age, gender, ethnicity, sexual orientation, education level, and income (see Table 4). Out of the 272 responses, the majority were aged between 25-30 comprising approximately 45% (n=123) of the total sample. At approximately 20% (n=54) those between 35-40 years old made up the second largest group, with those between ages 31-34 followed closely as the third biggest group at approximately 17% (n=45). The gender make-up of the sample is only comprised of males and females with the

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majority of the sample identifying as male (n=188); no other gender identity was specified despite the options provided in the questionnaire such as “transgender” and “non-binary”.

With sexual orientation, approximately 76% (n=205) of the sample identified as heterosexual; the second biggest group identified as bi-sexual at approximately 20% (n=54). Other participants identified as lesbian (n=7), gay (n=3), and asexual (n=2), and 1 participant preferred not to disclose. In terms of ethnicity, the majority of participants identified as Caucasian/White (n=156). Other participants identified as Asian/Asian American (n=46), Native American (n=26), Hispanic/Latino (n=23), African/Black American (n=17), mixed race (n=3), and one preferred not to disclose.

Making up approximately 73% (n=199) of the sample were those who stated they have a bachelor’s degree. Those with a master’s degree (n=35) made up the second biggest group. Others stated they had some college education (n=14), high school diploma (n=12), associate degree (n=10), and post-secondary education (n=2). Income levels were more evenly spread out in comparison to other demographic data collected. For example, 89 participants specified they earn between \$40,000-\$59,999, 54 stated they earn between \$20,000-\$39,999, 51 reported an income between \$60,000-\$79,999, 32 disclosed an earning between \$80,000-\$99,999, 23 specified their income was between \$0-\$19,999, 14 with an income between \$100,000-\$119,999, 5 with an income of \$120,000-\$139,999, and 4 stated making over \$140,000. Most of these were full-time employees (n=254) and the rest worked part-time (n=18).

Chapter 4: Results

The purpose of this study is to develop the DoF scale to determine if there are external factors that indeed influence the use of reactive and active adjustment styles incorporated within TWA. It was hypothesized that there are five external factors that influence the type of adjustment choice employees use at work: family obligation, job demand, job mobility, financial resources, and socio-political standing. The development of the DoF scale will provide a means to understand when these adjustment styles could be used. This chapter will discuss the findings of the study, particularly focusing on the results of the Exploratory Factor Analysis (EFA).

Exploratory Factor Analysis

Using the SPSS software, various methods were used to determine which items should be eliminated. A reliability check was performed to assess the inter-item correlation, ensuring that the items did not correlate strongly with one another or were measuring a different construct. No items produced a correlation of 0.3 or less and 0.8 or more (Tabachnick & Fidell, 2013) and therefore no items were deleted in this phase of the analysis based on inter-item correlation. A descriptive analysis was also run to determine missing values and skewness for item elimination in the Exploratory Factor Analysis (EFA) process. No missing values were reported, and the output showed that the data was not normally distributed based on skewness. The Principal Axis Factoring (PAF) extraction method was used for all analyses, according to Costello & Osborne's (2005) recommendation on data that is not normally distributed. Using PAF instead of Principal Component Analysis (PCA) is also consistent with the objective of this study, which is to identify the latent constructs items loaded onto to determine if there is a relationship between the DoF factors, rather than simply reducing the items into a certain number of factors. In addition to

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selecting a PAF for the EFA, an oblique rotation (Promax) was also used with all analyses because it was hypothesized that the DoF factors were likely correlated with one another.

Kaiser-Meyer-Olkin (KMO) and Bartlett's test of sphericity were also selected in the EFA, together with the use of eigenvalues and a scree plot to identify the number of factors the items loaded on to. All factor loadings less than 0.3 were suppressed using coefficient display format for ease of viewing. Based on these determinants and guided by how the items theoretically related to the definitions of the DoF factors, items were selected for deletion. A total of 29 factor analyses were run, each yielding various results that guided the item deletion process.

The initial factor analysis yielded 6 factors (see Table 5) based on eigenvalues and confirmed by a scree-plot (see Graph 1), yielding a KMO of .92 and a significant Bartlett's Test at 0.000 (see Table 6). Factor 1 had an eigenvalue of 12.50 which explained 29.76% of the variance. Factor 2 yielded an eigenvalue of 5.77 which explained an additional 13.75% of the variance. Factors 3, 4, 5, and 6 showed eigenvalues of 2.31, 1.31, 0.65, and 0.57 which explained an additional 5.51%, 3.12%, 1.54%, and 1.37% of the variance respectively (see Table 7).

The second factor analysis was also conducted using a PAF extraction and a Promax rotation to be consistent with the first analysis. One of the items was deleted because it cross loaded on to 3 factors. This yielded a KMO of 0.92, a significant Bartlett's test at 0.000, and 6 factors again, albeit the eigenvalues decreased. Factors 1, 2, 3, 4, 5, and 6 showed eigenvalues of 11.74, 5.39, 2.06, 1.22, 0.60, and 0.55 which explained 30.2%, 13.4%, 5.7%, 3%, 1.5%, and 1.4% of the variance respectively. The item deletion process continued for a total of 28 analyses, each time with various items deleted based on crossloadings and whether they theoretically captured the DoF factors and conveyed an adjustment style. In each succeeding analysis, one to

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two items were deleted at a time to be consistent with (Costello & Osborne, 2005) recommendation.

The six-factor structure began to decrease to five in analysis four, then to a four-structure model in analysis seven, with the percentage of the variable explained decreasing with each analysis. It was not until analysis 18 that the results showed a three-structure model. The initial three-factor structure had a KMO of 0.91 and a significant Bartlett's Test at 0.000. Factor 1 explained 31.0% of the variance, with factor two explaining an additional 16.5%, and then approximately 4% on top of that from factor 3.

The final analysis yielded a 2-factor structure using a PAF extraction method and Promax (oblique) rotation, which was not the 5-factor structure hypothesized. 10 items loaded on to factor 1 ranging from 0.439 to 0.758 (see Table 8), with an eigenvalue of 4.9, explaining 35% of the variance (see Table 9). This also produced a Cronbach's alpha of 0.89, with a KMO of 0.91 and significant Bartlett's test less than 0.001 (see Table 11). Due to the mixed nature of the items that loaded on to factor 1, it is referred to as "External Pressures".

Four items loaded on to factor 2, producing an eigenvalue of 2.1 which explained an additional 14.7% of the variance. It produced a Cronbach's alpha of 0.81 with a KMO of 0.79 and a significant Bartlett's test less than 0.001. Factor 2 is referred to as "Job Demand" given that its items were originally Job Demand items from the pilot study. Collectively, the 2-factor structure explained 49.7% of the variance (see Table 9) with a KMO of 0.88, a significant Bartlett's test of Sphericity less than 0.001 (see Table 10), and a Cronbach's alpha was 0.86 (see Table 11).

Chapter 5: Discussion

The purpose of this study is to develop the DoF scale to determine if there are external factors that indeed influence the use of reactive and active adjustment styles incorporated within TWA. It was hypothesized that there are five external factors that influences the type of adjustment employees use at work: family obligation, job demand, job mobility, financial resources, and socio-political standing. This chapter briefly reviews the results, then discuss the work, clinical, and research implications of this study. In addition, this chapter will also discuss the limitations of the study and highlight future directions.

Two studies were conducted to develop and refine items that attempted to capture the DoF concepts of Family Obligation, Job Demand, Job Mobility, Financial Resources, and Socio-Political Standing. Both the pilot and second study recruited participants from different sources. The first used a convenience sample of 111 undergraduate college students enrolled in various courses at the University of Wisconsin-Milwaukee. The second study recruited 272 participants using Amazon's Mechanical Turk's (M-Turk) online samples. Both studies kept the inclusion criteria constant which required that participants be 18 years old or over, and either work full-time or part-time in a business/organization that is not their own.

The pilot study was used primarily to generate and refine the scale items. An Exploratory Factor Analysis (EFA) was run in the second study using SPSS to determine latent constructs that represents the DoF factors. After 29 analyses, a 2-factor structure was found; the first factor with 10 items is called External Pressures with a Cronbach's Alpha of 0.89. The second factor with 4 items is called Job Demand with a Cronbach's Alpha of 0.81. The 2-factor structure

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explained 49.7% of the variance and produced a KMO of 0.88 and a Cronbach's Alpha of 0.86, which was significant at <0.001 .

The 2-factor structure that was found partially supports the hypothesis that there are five external factors that influences how one responds to work situations. The results show that the items developed for five distinct, yet correlated factors actually loaded onto two factors. The first factor with 10 items consists of a combination of family obligation, job mobility, financial resources, and socio-political standing items. This shows these factors impact work choices collectively, not separately as hypothesized. Together these items comprise what is called the "External Pressures" sub-scale. The second factor with only four items, only consisted of job demand items which comprises what is known as "Job Demand" sub-scale.

Work Implications

Despite the results only partially supporting the hypothesis that there are 5 external factors influencing adjustment styles, the 2-factor structure is evidence still that there are external factors that could impact work choices. It suggests important workplace and clinical implications that are important for work managers, supervisors, employers, and clinicians to be aware of. For example, various research publications (van den Heuvel, Geuskens, Hooftman, Koppes, & van den Bossche, 2010; Letvak & Buck, 2008; Taiwo, 2010) show different reasons for low work productivity. In conceptualizing from a TWA perspective, one reason for low productivity is how people choose to respond to their work values not being met. Those who use a reactive adjustment style may opt to meet the minimal work requirements to simply "tolerate" the discordance they're experiencing. Further, by using a reactive adjustment, employees are more likely to keep their concerns to themselves (Cortina, 2004) rather than communicating

them to their managers, supervisors, or employers in an effort to restore equilibrium. The 2-factor structure found in this study can help individuals in positions of power at work to be aware of, and even understand various factors that impact their employees' performance. Being aware of these factors can be used as evidence to support changes in policies and social support in the workplace, so employees feel empowered to address concerns and increase productivity (Letvak & Buck, 2008).

Clinical Implications

From a clinical perspective, the 2-factor structure found in this study has two potential benefits. One is understanding external factors that could directly impact psychological disorders such as depression and anxiety, and the other is understanding how this relationship can be compounded or mediated by how one adjusts to these issues at work. Without proper coping mechanisms or systems in place to promote resiliency, much of the DoF factors captured in the 2-factor structure have been shown to have a direct link to mental disorders and behavioral problems (Marsiglia, Kulis, Perez, & Bermudez-Parsai, 2011). For example, lacking financial resources has been found to be a contributing factor to anxiety for different groups (Kim, Lim, Maleku, Kagotho, & Yang, 2019; Sages, Britt, & Cumbie, 2013) and has also contributed to influencing maladaptive coping mechanisms (Tran, Fitzke, Wang, Davis, & Pederson, 2022). The link between DoF factors and mental illness is particularly enforced when DoF factors are compounded by other factors such as marked dysfunctions while juggling family obligations (Cabral, Duarte, Ferreira, & dos Santos, 2014) or juggling multiple roles in the home as a single parent (Cairney, Boyle, Offord, & Racine, 2003), or having a high involvement in family problems (Gore, Aseltine, & Colten, 2010). The relationship between DoF factors and mental illnesses is also true for individuals who experience a combination of these factors, such as high

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family obligation and low financial resources (Vreeland et al, 2019) or racism and low job demand (Olasunkanmi-Alimi, Natalier, & Mulholland, 2022).

Not all mental and behavioral disorders are directly caused by DoF factors, however. At times, it is the compound effect of these factors with work stress that triggers these issues. For example, lack of social support at work has been shown to contribute to and moderate the onset of these mental health issues (Gray-Stanley et al, 2010), especially when stress levels are high from external factors. In addition, the lack of structural support such as policies, training opportunities, and flexibility to help employees deal with DoF factors effectively, can be the reason for the development of mental and behavioral problems (Melchior et al, 2007).

There is also evidence to suggest that the compounding effects are bi-directional. In other words, the likelihood of developing psychological disorders such as depression, anxiety, and trauma by DoF factors are not just magnified by work stress, the reverse is also true. As discussed previously, many marginalized individuals tend to utilize a reactive adjustment style and often cope with work issues by utilizing informal resources such as families and friends (Cortina, 2004). However, not addressing or resolving work issues can eventually hinder relationships at home (Guerrerro & Posthuma, 2014) and therefore rupture mechanisms that could help prevent the development of mental or behavioral problems. In addition, work issues going unresolved could exacerbate DoF factors such as financial resources or job demand which consequently trigger the development of behavioral and psychological problems.

The importance of understanding the interactions between DoF factors, work issues, and people's emotional and behavioral responses highlight significant clinical implications. People spend about a third of their lives at work and is likely a major contributor to distress and other

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psychological conditions. Yet, the topic of work is often downplayed or even ignored in clinical intakes or screening processes. By being more aware of the role of work in people's presenting problems and how work interacts with DoF factors, clinicians are more likely to ask questions around these topics. Better screening and intake processes can be developed, and this information can be incorporated within the conceptualization process to treat patients holistically. Reality is, individuals in Human Resources, the department that is responsible for handling human concerns in the workplace, are not trained or equipped with the skills to provide adequate help or support to address psychological or emotional needs. The same is true for people's home support such as families and friends. The data found in this study can help clinicians provide that adequate care where and when needed.

Research Implications

In addition to the work and clinical implications, this study also has relevance in research. Since it was developed, studies using TWA as a theoretical framework are characterized by three different themes: model expansion, model testing, and model application. Much of the expansion efforts were done in the 1960s where scholars and researchers incorporated findings from other research such as personality theory (Bizot, 1993), and focused on refining the psychometrics of the model. Model testing was a phase in the TWA research history that is comprised of research looking to test the reliability and validity of the model using different populations. Much of the focus of this literature, however, was on the predictive power of the model to understand the relationship between work satisfaction and turnover intention. Finally, model application focused on answering research questions that had clinical and work application such as understanding how to help individuals with particular psychological needs transition back to work.

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The current study can contribute to these themes and further enrich the TWA literature in different ways. For example, the 2-factor structure found can expand the TWA framework by providing insight on what drives the different adjustment styles. It encourages scholars to consider factors beyond just the basic tenets of the model, which could open new ways of utilizing TWA to better understand the person-environment fit relationship.

The current study can also contribute to the “model testing” literature because it magnifies how the TWA framework is utilized. For example, most of the model testing literature focuses on the predictive ability of the model to test turnover intentions. As a result, this body of research largely ignores other key components of the framework such as adjustment styles, flexibility, and tolerance levels in discorrespondence. Now that external factors have been revealed, researchers and scholars can revive their interest in TWA and better utilize the entire model in their studies.

Limitations

A major limitation to this study is the demographic make-up of the sample, which is composed mostly of Caucasian/White (57%) heterosexual (75%) males (69%) who are aged between 25-30 years (45%), and are highly educated with at least a Bachelor’s degree (73%). These demographic characteristics are of the majority culture that might only reflect a particular way of responding to work issues (e.g., active adjustment). The lack of marginalized groups representation such as racial/ethnic minorities, women, older employees, sexual minorities, and low education levels make it difficult to examine and confirm the relationship between marginalization status at work, DoF factors, and certain adjustment styles to discorrespondence.

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Another limitation is the use of part-time workers that only made up about 7% of the sample. Given that part-time employees do not spend the same number of hours at work, it is difficult to measure whether a) they have the same work values as full-time employees, b) experience dis correspondence the same way, and c) are impacted by factors identified in the 2-factor structure or not. These potential differences between part-time and full-time employees might have confounded the results in some way that has not yet been discovered.

Future Directions

This study will certainly begin to fill a critical gap in the vocational psychology literature, particularly the body of research that involves the TWA framework. As it currently exists, the TWA model posits that employees use one of two adjustment styles when they experience dis correspondence at work: active or reactive adjustment. To this date, factors that influence these adjustment styles were unknown. The purpose of this study was to develop the DoF scale to identify what these factors are, and that purpose has been achieved. One future direction of this study is to take a step further from EFA and confirm the model fit using a Confirmatory Factor Analysis (CFA). This process will provide the convergent and divergent validity of the DoF scale against other well-established measures.

In addition, now that we know that external factors exist to influence work choices, another future direction for this study is to determine ‘how’ they influence these choices. Specifically, this future direction involves testing the hypothesis posed by Eggerth (2018), in that individuals with high degrees of freedom measured by the DoF scale are more likely to use an active adjustment. In contrast, those with lower degrees of freedom are more likely to use a reactive adjustment style.

Summary

As mentioned above, the aim of this study was to develop a measure that helps us understand what factors influence the use of different adjustment styles per the TWA framework. Items were formulated based on Eggerth's (2018) theory that there are five external factors that have an influence over these work choices: family obligation, job demand, job mobility, financial resources, and socio-political standing. Items were generated for each category and data was collected at two different time-points using different samples. The first dataset was collected from a pilot study involving college students; this pilot helped refine the items. The second dataset was collected using a study that recruited participants from an online sample. Exploratory Factor Analysis was run using SPSS and a 2-factor structure emerged, highlighting that four of the five initial factors clustered into one, and the one factor (job demand) remained true. Work, clinical, and research implications were discussed. In addition, limitations of the study were highlighted and recommendations for future direction were outlined.

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Appendices**Table 1: Initial Item Pool**

Item Description	Family Obligation	Job Demand	Job Mobility	Financial Resources	Socio-Political Standing
I am obligated to provide for my family	X				
My family depends on me for financial support	X				
My family can't get by without me	X				
I am the breadwinner in my family	X				
I need to provide for my family	X				
I have a lot of family responsibilities	X				
I can't share my family responsibilities	X				
I'm the only one that can take care of my family's needs	X				
My family is depending on me to work	X				
My family depends on me to buy things at home	X				
I do not have many skills for work		X			
I lack education		X			
My skillset is not sort after		X			
My skillset is not in demand		X			
I don't get many job offers		X			
I struggle to find work		X			
I will take any job I can get		X			
I'm desperate for work		X			
I don't have the needed work experience		X			
I want to work		X			
I want to change jobs but I can't			X		
I wish I could move for work but I'm stuck here			X		
I'm not able to switch jobs easily			X		
I don't like my job but it pays the bills			X		
I don't have the flexibility to move jobs when I want			X		
There are not many good jobs out there			X		
The job market is not good elsewhere			X		

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I don't have the right skills to pursue the job I want	X		
I don't have the necessary skills to pursue another job	X		
I don't have the time to look for another job	X		
I can't just up and leave my job	X		
I don't have a steady income source		X	
I have a lot of debt to pay off		X	
I don't have any money in my bank account		X	
I owe money		X	
I'm struggling financially		X	
I need money		X	
I don't have the financial means to pay off my loans		X	
I have no financial support from others		X	
My job is my only source of income		X	
My background makes it difficult for me to argue my rights at work			X
My background limits work options available to me			X
I don't want more trouble at work than I have already experienced			X
My background forces me to avoid trouble at work			X
I just want a low-key job			X
My criminal record makes it hard to find work			X
I'm an undocumented person/an illegal immigrant			X
I was incarcerated			X
I have a criminal record			X
I have a pending court case			X
My legal standing makes it difficult for me to voice my concerns at work			X

Note: the prompt for each DoF item group was “The next few questions will ask you about (insert DoF factor here). Please indicate to what extent you agree or disagree with each statement”. The item ratings were given on a 5-point Likert scale ranging from 1=Strongly Agree, 2=Agree, 3=Neither Agree nor Disagree, 4=Disagree, 5=Strongly Disagree.

Table 2: Pilot Study Participant Demographic

Variable	Total (N=111)
Age	
18-24	58.6%
25-30	23.4%
31-34	9%
35-40	2.7%
41-44	1.8%
45-50	1.8%
55-60	1.8%
65+	0.9%
Gender	
Female	7.4%
Male	21.6%
Ethnicity	
Native American	1.8%
Native Hawaiian or Other PI	0.9%
African/Black American	3.6%
Caucasian/White	82.9%
Hispanic/Latino	4.5%
Other	6.3%
Sexual Orientation	
Bi-sexual	14.4%
Heterosexual	75.7%
Gay	2.7%
Lesbian	4.5%
Asexual	0.9%
Other	0.9%
Employment	
Part-time	70.3%
Full-time	29.7%

Table 3: Updated Item Pool

Item Description	Family Obligation	Job Demand	Job Mobility	Financial Resources	Socio-Political Standing
My family depends too much on my income for me to risk not agreeing with my boss at work	X				
I have too many family responsibilities to risk complaining about things I don't like at work	X				
My family can't get by financially if I lose my job	X				
I put up with unfairness at work because my family depends on my job for food and other physical needs	X				
I owe it to my family to provide for them financially	X				
I'm not able to meet my family responsibilities if I lose my job	X				
Meeting my family responsibilities depends on me having a stable job	X				
I am responsible to provide for my family because I have an income	X				
Because of family responsibilities, I avoid conflict at work	X				
I voice concerns at work because I need to provide for my family	X				
My job skills are in enough demand that I don't have to put up with poor working conditions			X		
I have good training and work experience that I don't have to worry about losing my job			X		
I have enough experience on the job to be comfortable asking for what I need			X		
I can make decisions at work that my boss might not like because my skills are sought after by other employers in my field			X		
I'm comfortable voicing my opinions at work because I have good work experience			X		
I have enough work experience to get any job I want in my field			X		
My work experience and education give me plenty of work opportunities			X		

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I can easily find work when I want because of my work experience and education	X	
There are enough jobs available in my field that I can risk making my boss unhappy		X
I can't just up and leave my job for a different job if I'm not happy at work		X
Because I'm not able to switch jobs easily, I keep quiet if there are issues at work		X
I can put up with unfavorable work conditions because I can move jobs whenever I want		X
It's hard for me to change my job because there are not many options in my field		X
Changing jobs is hard for me because of where I live		X
My skills are too limited for me to get another job		X
I feel comfortable applying to different jobs because I can move wherever I want for work		X
I have access to enough financial resources that I can risk being fired over trying to improve working conditions		X
I avoid doing certain things at work that could put my job at risk because it's my only financial resource		X
If I lose my job, I have other means to get by financially		X
People I know can help me financially if I don't have a job		X
Because of my financial situation, I'm not able to do everything I would like at work		X
My financial situation prevents me from doing what I enjoy for work		X
Due to my financial situation, I will take whatever job I can get		X
Because I need money, I don't complain if my work environment is not good for me		X
Because of my racial/ethnic background, I sometimes live with things that other workers don't put up with		X

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Due to my gender, I don't feel comfortable trying to improve work conditions	X
My legal history makes it easy for me to voice concerns at work	X
Because of my sexual orientation, it is hard for me to do certain things at work	X
My social identity makes it difficult for me to find work	X
Due to my legal background, I'm comfortable asking for what I need at work	X
My legal work status often makes me feel uncomfortable interacting at work	X
Because of my legal background, I will take whatever job I can get	X

Note: the prompt for each DoF item group was “The next few questions will ask you about (insert DoF factor here). Please indicate to what extent you agree or disagree with each statement”. The item ratings were given on a 5-point Likert scale ranging from 1=Strongly Agree, 2=Agree, 3=Neither Agree nor Disagree, 4=Disagree, 5=Strongly Disagree.

Table 4: Study 2 Participant Demographic

Variable	Total (N=272)
Age	
18-24	1.5%
25-30	45.2%
31-34	16.5%
35-40	19.9%
41-44	5.1%
45-50	5.5%
51-54	1.8%
55-60	1.5%
61-64	2.2%
65+	0.7%
Gender	
Female	30.9%
Male	69.1%
Ethnicity	
Native American	9.6%
African/Black American	6.3%
Asian/Asian American	16.9%
Caucasian/White	57.4%
Hispanic/Latino	8.5%
Other	1.1%
Prefer not to say	0.4%
Sexual Orientation	
Bi-sexual	19.9%
Heterosexual	75%
Gay	1.1%
Lesbian	2.6%
Asexual	0.7%
Other	0.4%
Prefer not to say	0.4%
Education Level	
High School Diploma or GED	4.4%
Post-Secondary Education (Trade School)	0.7%
Some College Education	5.1%
Associates Degree	3.7%
Bachelor's Degree	73.2%
Master's Degree	12.9%

THE DEVELOPMENT OF DOF SCALE

Income Bracket	
\$0 - \$19,999	8.5%
\$20,000 - \$39,999	19.9%
\$40,000 - \$59,999	32.7%
\$60,000 - \$79,999	18.8%
\$80,000 - \$99,999	11.8%
\$100,000 - \$119,999	5.1%
\$120,000 - \$139,999	1.8%
\$140,000+	1.5%
Employment	
Part-time	6.6%
Full-time	93.4%

THE DEVELOPMENT OF DOF SCALE

Table 5: EFA Initial Item Pool Factor Loadings

Item Description	1	2	3	4	5	6
My family depends too much on my income for me to risk not agreeing with my boss at work	0.694					
I have too many family responsibilities to risk complaining about things I don't like at work	0.710					
My family can't get by financially if I lose my job	0.554		0.342			
I put up with unfairness at work because my family depends on my job for food and other physical needs	0.709					
I owe it to my family to provide for them financially	0.456		0.530			
I'm not able to meet my family responsibilities if I lose my job	0.593		0.369			
Meeting my family responsibilities depends on me having a stable job	0.507		0.471			
I am responsible to provide for my family because I have an income	0.507		0.588			
Because of family responsibilities, I avoid conflict at work	0.659					
I voice concerns at work because I need to provide for my family	0.537					
My job skills are in enough demand that I don't have to put up with poor working conditions		0.677				
I have good training and work experience that I don't have to worry about losing my job		0.599				
I have enough experience on the job to be comfortable asking for what I need		0.596				
I can make decisions at work that my boss might not like because my skills are sought after by other employers in my field		0.602				
I'm comfortable voicing my opinions at work because I have good work experience		0.632				
I have enough work experience to get any job I want in my field	0.305	0.649				
My work experience and education give me plenty of work opportunities		0.688				
I can easily find work when I want because of my work experience and education		0.635				

THE DEVELOPMENT OF DOF SCALE

There are enough jobs available in my field that I can risk making my boss unhappy	0.427	0.552		
I can't just up and leave my job for a different job if I'm not happy at work	0.504			
Because I'm not able to switch jobs easily, I keep quiet if there are issues at work	0.708			
I can put up with unfavorable work conditions because I can move jobs whenever I want	0.486	0.302		
It's hard for me to change my job because there are not many options in my field	0.697			
Changing jobs is hard for me because of where I live	0.637	-0.329		0.307
My skills are too limited for me to get another job	0.687			
I feel comfortable applying to different jobs because I can move wherever I want for work	0.373	0.523	-0.311	
I have access to enough financial resources that I can risk being fired over trying to improve working conditions	0.371	0.597		
I avoid doing certain things at work that could put my job at risk because it's my only financial resource	0.542		0.417	
If I lose my job, I have other means to get by financially		0.533		
People I know can help me financially if I don't have a job		0.371		
Because of my financial situation, I'm not able to do everything I would like at work	0.662		0.329	
My financial situation prevents me from doing what I enjoy for work	0.556			
Due to my financial situation, I will take whatever job I can get	0.608		0.302	
Because I need money, I don't complain if my work environment is not good for me	0.612		0.390	
Because of my racial/ethnic background, I sometimes live with things that other workers don't put up with	0.730		-0.317	
Due to my gender, I don't feel comfortable trying to improve work conditions	0.703		-0.374	
My legal history makes it easy for me to voice concerns at work	0.504			

THE DEVELOPMENT OF DOF SCALE

Because of my sexual orientation, it is hard for me to do certain things at work	0.737	-0.340
My social identity makes it difficult for me to find work	0.743	-0.344
Due to my legal background, I'm comfortable asking for what I need at work	0.482	
My legal work status often makes me feel uncomfortable interacting at work	0.752	-0.326
Because of my legal background, I will take whatever job I can get	0.703	

Note: the prompt for each DoF item group was “The next few questions will ask you about (insert DoF factor here). Please indicate to what extent you agree or disagree with each statement”. The item ratings were given on a 5-point Likert scale ranging from 1=Strongly Agree, 2=Agree, 3=Neither Agree nor Disagree, 4=Disagree, 5=Strongly Disagree.

Graph 1: EFA Initial Item Pool Scree Plot

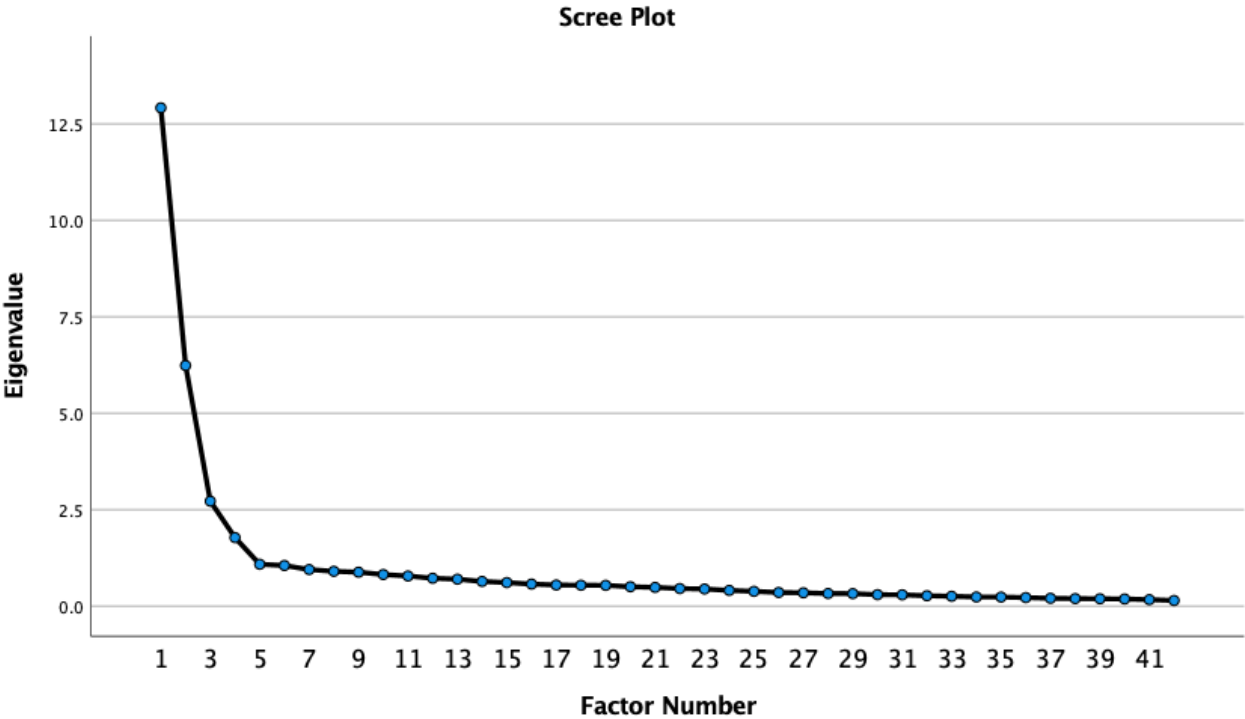


Table 6: EFA Initial Item Pool KMO and Significance Value

KMO and Bartlett's Test		
Kaiser–Meyer–Olkin Measure of Sampling Adequacy.		.925
Bartlett's Test of Sphericity	Approx. Chi-Square	6946.137
	df	861
	Sig.	.000

Table 7: EFA Initial Item Pool Total Variance Explained

Total Variance Explained							
Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings ^a
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	12.918	30.758	30.758	12.502	29.768	29.768	10.626
2	6.239	14.855	45.613	5.777	13.754	43.522	6.425
3	2.723	6.483	52.095	2.316	5.514	49.035	8.784
4	1.779	4.235	56.330	1.311	3.122	52.157	7.463
5	1.087	2.588	58.918	.650	1.548	53.705	2.235
6	1.055	2.512	61.430	.575	1.370	55.075	.918

Table 8: EFA Final Item Pool Factor Loadings

Item Description	1	2
My family depends too much on my income for me to risk not agreeing with my boss at work	0.698	
I have too many family responsibilities to risk complaining about things I don't like at work	0.671	
I put up with unfairness at work because my family depends on my job for food and other physical needs	0.747	
My job skills are in enough demand that I don't have to put up with poor working conditions		0.653
I can make decisions at work that my boss might not like because my skills are sought after by other employers in my field		0.646
I'm comfortable voicing my opinions at work because I have good work experience		0.688
I have enough work experience to get any job I want in my field		0.719
Because I'm not able to switch jobs easily, I keep quiet if there are issues at work	0.702	
I can put up with unfavorable work conditions because I can move jobs whenever I want	0.439	
Because of my financial situation, I'm not able to do everything I would like at work	0.671	
Because I need money, I don't complain if my work environment is not good for me	0.626	
Because of my racial/ethnic background, I sometimes live with things that other workers don't put up with	0.741	
Due to my gender, I don't feel comfortable trying to improve work conditions	0.712	
Because of my sexual orientation, it is hard for me to do certain things at work	0.758	

Table 9: EFA Final Item Pool Total Variance Explained

Total Variance Explained							
Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings ^a
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	5.390	38.503	38.503	4.903	35.018	35.018	4.836
2	2.554	18.245	56.748	2.062	14.725	49.744	2.397

Table 10: EFA Final Item Pool KMO and Significance Value

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.885
Bartlett's Test of Sphericity	Approx. Chi-Square	1715.800
	df	91
	Sig.	<.001

Table 11: EFA Final Item Pool Cronbach's Alpha

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.867	.862	14