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Are there gender differences in work ethic? An examination of the measurement equivalence of the multidimensional work ethic profile

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ABSTRACT

Previous research has indicated that males and females differ on their reported levels of work ethic. However, previous studies have relied upon work ethic inventories with limited generalizability, and no study has evaluated the invariance of measures. This study examined measurement invariance by exploring the differential item and test functioning of one work ethic inventory, the multidimensional work ethic profile (MWEP; Miller, Woehr, & Hudspeth, 2002) for male and female respondents. Results did not indicate that the MWEP functioned differently by gender at the test or item level. Hence, work ethic as measured by the MWEP does not carry different socially constructed meanings for men versus women. We also conclude that in contrast with previous research, women do not have a higher level of work ethic than men.

1. Introduction

The "changing nature of work" has become a ubiquitous theme in the study of organizational behavior. Work roles and behaviors are now typically associated with a state of flux more so than a predictable set of tasks. As a result, organizations have become interested in identifying employees who are committed to the inherent value of work in general (i.e., work ethic). By focusing on work ethic, organizations aim to build a workforce that will proactively engage and persist in behaviors that promote the effectiveness of the organization over time, tasks, and situations (Ryan, 2002). In particular, the assessment of work ethic has become increasingly important as it allows organizational decision-makers to build and sustain a motivated and diligent labor force. For instance, in a study of American managers, Flynn (1994) reported that for nearly 60% of respondents, work ethic was the top-ranked factor when hiring administrative employees.

Based on previous literature and original empirical research, Miller, Woehr, and Hudspeth (2002) posited that work ethic is not a unitary construct, but a constellation of attitudes and beliefs pertaining to work behavior. Specifically, they state that work ethic: (a) is multidimensional; (b) pertains to work and work-related activity in general, not specific to any particular job (yet may generalize to domains other than work); (c) is learned; (d) refers to attitudes and beliefs (not necessarily behavior); (e) is a motivational construct reflected in behavior; and (e) is secular, not necessarily tied to any one set of religious beliefs. Miller et al. identified seven conceptually distinct (i.e., divergent) dimensions that comprise the work ethic construct: Centrality of work, self-reliance, hard work, leisure, morality/ethics, delay of gratification, and wasted time (see Table 1). This measure displays strong relationships between the dimensions of work ethic and work attitudes and outcomes. Specifically, Miller et al. (2002) reported that the MWEP subscales demonstrated significant multiple correlations with job satisfaction ($R = 0.50$), job involvement ($R = 0.65$), and organizational commitment ($R = 0.48$), as well as a multiple R of 0.37 between MWEP dimensions and supervisory performance ratings.

The results of several additional studies have supported positive relationships between work ethic and work-related outcomes. Merrens and Garrett (1975) revealed a relatively large effect size for the impact of work ethic on time spent on task ($d = 1.10$) and work completed ($d = 1.58$). Similarly, Greenberg (1977) found a moderate effect of work ethic on task persistence ($\omega^2 = 0.47$). Finally, Blood (1969) reported a mean correlation of 0.17 between work ethic and job satisfaction. However, most work ethic inventories used in this stream of research are unidimensional, single-scale inventories. Subsequently, researchers have questioned the mismatch between the theoretical multidimensional conceptualization of work ethic and the widespread use of unidimensional scales which have limited implications for interpretation and validity.

1.1. Gender differences in work ethic

Many studies have reported gender differences in work ethic (e.g., Furnham & Muhiudeen, 1984; Hall, 1990, 1991; Hill, 1997;

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Table 1
MWEP dimensions, dimension definitions, and sample items.

Dimension	Definition	Sample items
Centrality of work	Belief in work for work's sake and the importance of work	Even if I inherited a great deal of money, I would continue to work somewhere It is very important for me to always be able to work
Self-reliance	Striving for independence in one's daily work	I strive to be self-reliant Self-reliance is the key to being successful
Hard work	Belief in the virtues of hard work	If you work hard you will succeed By simply working hard enough, one can achieve their goals
Leisure	Pro-leisure attitudes and beliefs in the importance of non-work activities	People should have more leisure time to spend in relaxation The job that provides the most leisure time is the job for me
Morality/ethics	Believing in a just and moral existence	People should be fair in their dealings with others. It is never appropriate to take something that does not belong to you
Delay of gratification	Orientation toward the future; the postponement of rewards	The best things in life are those you have to wait for If I want to buy something, I always wait until I can afford it
Wasted time	Attitudes and beliefs reflecting active and productive use of time	I try to plan out my workday so as not to waste time Time should not be wasted, it should be used efficiently

Miller, 1980; Petty & Hill, 1994; Wollack, Goodale, Witjing, & Smith, 1971). Most have reported higher work ethic scores for women than men. For instance, Spence and Helmreich (1983) and Kirkcaldy, Furnham, and Lynn (1992) found evidence to support the tendency for women to obtain higher mean scores than men with respect to work ethic across occupations. This finding was replicated across the vast majority of countries examined in a large international study conducted by Lynn (1991). These studies all failed to recognize the multifaceted nature of work ethic. Another issue however is a lack of information on the measurement equivalence/invariance (MEI) of the instrument used to draw conclusions regarding gender differences. As noted by Hill (1997), gender-role stereotypes may lead to different approaches to work ethic endorsement for males and females, such that the work ethic construct may have different socially constructed meanings for men versus women. Without an analysis of the multiple dimensions that compose the work ethic construct, our understanding of potential differences is limited. Further, without evidence of MEI, whether these findings reflect actual differences among men and women in espoused work ethic or simply different interpretations of the construct remains unclear (Vandenberg & Lance, 2000).

In our review of the literature, we did not find any studies that investigated the MEI between men and women with respect to work ethic measures, even though as noted earlier, failure to do so makes subsequent conclusions dubious. Typical approaches to the analysis of MEI are based on classical test theory and include mean differences across groups, relationships with external variables, internal covariance differences across item responses, or multi-group confirmatory factor analysis (CFA). Vandenberg and Lance (2000) advocated the multi-group CFA method as a useful approach. This method is based on classical true score theory, where variance in observed scores is comprised of true score variance and error variance.

Another popular approach to examining MEI is item response theory (IRT; Embretson & Reise, 2000; Hambleton, Swaminathan, & Rogers, 1991). One primary distinction among these methods is that IRT evaluates psychometric properties at the item-level, whereas CFA approaches primarily focus on the test as a whole. If an item-level examination is of interest, then IRT provides a clearer picture of test properties over CFA approaches. Also, CFA methods provide indices of item characteristics such as difficulty (p-values) and discrimination (item-total correlations) that are dependent on group differences in traits (Raju & Ellis, 2002). IRT parameter estimation techniques yield values that are independent of the group on which the set of items was administered. In other words, they allow for the control of group differences in ability when estimating parameters (difficulty and location) so they are not confounded with group differences (Raju & Ellis, 2002).

IRT also takes a different approach toward the examination of MEI than CFA approaches, where IRT approaches view invariance in terms of "differential functioning" of items (DIF) and tests (DTF). When items demonstrate invariance across two groups, they possess invariant item parameters (e.g., difficulty and discrimination) given the same level of the latent trait. However, when individuals possess the same level of the trait or ability and have different probabilities of obtaining expected scores on an item, the item displays DIF (Hambleton et al., 1991; Hulin, Drasgow & Parsons, 1983). Specifically, DIF refers to group differences in their responses to test items when their ability (or trait-level) is held constant. Differential test functioning is the extension of this same phenomenon to test-level differences in response tendencies (Raju & Ellis, 2002). Raju, van der Linden, and Fleer (1995) proposed a method for evaluating the 'differential functioning of items and tests' (DFIT). This approach further offers two indices of DIF: compensatory (CDIF) and non-compensatory (NCDIF). The NCDIF index represents the average squared difference between the two subgroups' item-level true scores, and CDIF represents the relative impact in test-level functioning of individual items (Raju et al., 1995).

In other areas of individual differences research, DIF has been identified across male and female respondents. For instance, Reise, Smith, and Furr (2001) found gender DIF on items on several facets of the NEO PI-R neuroticism scale. The implications for such findings are two fold: (a) gender by item content interactions may be present, and (b) comparisons of mean levels of males and females may be inappropriate to the extent that items do not function the same way for both subgroups. In the present study, we seek to examine whether MWEP items function in the same manner for males and females.

1.2. Implications and contribution of current study

In sum, previous work on gender differences in work ethic has been marked by construct deficiency coupled with a lack of measurement equivalence information regarding differences between male and female respondents. To address these issues, the current paper presents MEI information between men and women with respect to each of the dimensions of the MWEP, as well as a comparison of differences using a multidimensional work ethic inventory (i.e., the MWEP).

2. Method

We examined DIF and DTF of the MWEP between responses from 1122 men and 828 women. Data were gathered from 1996 to 2002 in the United States, in both industrial (25.91%) and