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Is It Undervalued? A Qualitative and Quantitative Review of the Work Values-Job Performance Relationship

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Is It Undervalued? A Qualitative and Quantitative Review of the Work Values-Job Performance Relationship

by

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Abstract

Title: Is It Undervalued? A Qualitative and Quantitative Review of the Work Values-Job Performance Relationship

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Researchers have been calling for greater exploration of the relationship between work values and job performance for about five decades (Goodale, 1973; J.-I. C. Hansen & Wiernik, 2017). The current study integrates research on the relationship between work values and job performance over the course of those five decades to better understand this connection. First, a thorough review of work values is presented, including a discussion of their nature, antecedences, construct clarification (how they differ from other individual differences), construct specification (how they differ from other value-based constructs), operationalization, taxonomy, measurement, group differences, stability, and outcomes. This review also includes an expanded discussion of theoretical perspectives supporting work values as a predictor of job performance.

Second, a meta-analysis is presented to summarize the predictive validity of work values for job performance taking into consideration different operationalizations

of both constructs in addition to the effects of different study characteristics. This included examining multiple moderators, such as job performance type (task, contextual or OCB), job performance assessment (subjective, objective), job performance information source (organization, supervisor, peer, self), work values measurement (rating, ranking), work values type (independent work values, work values congruency), work values congruence operationalization (person-organization fit, person-supervisor fit, person-group fit, person job fit), work values congruence type (direct, indirect), work values congruence assessment (perceived fit, subjective fit, objective fit), study type (cross-sectional, longitudinal), and publication status (published, unpublished).

Based on the results from 65 studies (77 samples) involving 22,681 participants and 257 effect sizes, the mean corrected operational validity of work values in predicting job performance is .26 for all the studies, and .28 for rating-based studies. This represents a positive relationship between work values and job performance that is moderate to relatively large in magnitude and is in line with other prominent predictors of job performance (Sackett et al., 2021).

The results of this meta-analysis highlight the potential value of adding work values to selection systems and suggest that researchers and practitioners should focus more attention on the nature and implications of work values in organizational settings.

Table of Contents

List of Figures

List of Tables

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Dedication

To my family..

To my infant son, *Yusuf*, whose smile proved to be more powerful than my stress and never failed to make me smile even during the most challenging moments of working on my dissertation…

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To the best brother in the world, my talented and loving brother, *Hossam*…

My family has always been my greatest supporter. For their endless encouragement, patience, and love, I am forever in their debt.

Chapter 1
Introduction

Organizations clearly value the job performance of their employees and design systems to enhance that performance. One such system is employee selection, which is often based in part on findings regarding major individual difference predictors of job performance. Given this, potentially useful predictors of job performance have been studied for decades and numerous meta-analyses have summarized much of this work. These meta-analyses have covered a number of major individual difference domains, including intelligence (Salgado et al., 2003), personality (Judge et al., 2013), job knowledge (Dye et al., 1993), integrity (D. S. Ones et al., 1993), emotional intelligence (Joseph et al., 2015), work experience (Van Iddekinge et al., 2019), biographical data (Speer et al., 2021), and vocational interests (Nye et al., 2017). However, one major domain that has been neglected in this regard is work values.

To date, no study has exclusively focused on reviewing the relationships found in the literature between the constructs of work values and job performance. Potentially as a result of this gap, work values appear to be relatively neglected in selection contexts. For example, Sackett et al.'s (2021) recent examination of meta-analytic validity estimates of predictors of job performance did not address work

values. A few previous reviews (e.g., Arthur et al., 2006; Hoffman & Woehr, 2006; Kristof-Brown et al., 2005) have examined values, but these studies focused specifically on the notion of values congruency, acting as an operationalization of person-organization or person-job fit. This research thus did not entail a broad and systematic examination of the evidence related to the work value-job performance relationship. Furthermore, as will be discussed, previous studies have produced inconsistent findings related to work values' criterion-related validity. Although these previous studies have shown that individuals' values clearly relate to job performance (e.g., Jalalkamali et al., 2016), the extent of this relationship between values and job performance is not yet as clear.

This lack of a clear understanding of the relationship between values and performance has been noted as an important gap for decades. A call to examine the relationship between work values and job performance was made in 1973 to discover how dissimilar work orientations impact job performance (Goodale, 1973). A similar call to review the relationship between work values and job performance was made about four decades later, emphasizing that there is a significant amount of ambiguity regarding the nature of the relationship between values and performance in the workplace (J.-I. C. Hansen & Wiernik, 2017).

This is unfortunate given that work values are known to relate to many critical organizational outcomes such as job performance (Jalalkamali et al., 2016),

2

job choice decisions (Judge & Bretz, 1992), task preference (Tang & Baumeister, 1984), job satisfaction (J. R. Edwards & Cable, 2009), engagement (Schreurs et al., 2014), and job-fit (Sortheix et al., 2015). Also, work values appear to have a unique position in individuals' psychological makeup, as they have demonstrated incremental validity above and beyond other individual differences such as personality (Berings et al., 2004), motives (Biernat, 1989), and vocational interests (Rounds, 1990) in predicting organizational outcomes. This indicates that work values could be a useful addition to organizational selection systems and that researchers and practitioners could be missing out on its potential value in the world of organizational science, specifically in predicting job performance.

Therefore, this research focuses on work values and job performance. The current study addresses the early and recent calls by Goodale (1973) and Hansen and Wiernik (2017) and the gap in the literature related to understanding the nature of this relationship and accurately estimating the magnitude and direction of it. Given that there have been no previous attempts to organize and integrate findings on this topic, a comprehensive systematic examination of evidence on the validity of work values in predicting job performance can address these previous calls (Goodale, 1973; J.-I. C. Hansen & Wiernik, 2017).

The current study intends to address this gap by comprehensively examining the relationship between work values and job performance qualitatively

3

and quantitatively. To do so, this research first reviews the domain of work values. Previous reviews of work values have not sufficiently examined this construct and its relationship to other conceptually similar constructs. So, one of the first goals of the current research was to provide a thorough review of work values to shed light on these constructs in a systematic way, including discussing their nature, antecedences, construct clarification (how they differ from other individual differences), construct specification (how they differ from other value-based constructs), operationalization, taxonomy, measurement, group differences, stability, and outcomes. In addition, theories and models that can potentially explain why work values affect job performance are extensively discussed. This thorough review of the area of work values integrates and synthesizes the seemingly fragmented literature on the topic of work values to serve as a foundation for the meta-analytic study that we conducted.

After completing this review, a meta-analysis was conducted focusing on the evidence regarding work values' criterion-related validity in predicting job performance. For work values, we examine how values relate to performance independently and in the form of value congruence. Work value congruence included subjective, objective, and perceived fit. In addition, work values are investigated in terms of congruence with the organization, supervisor, group, and job. For job performance, we examine task and contextual performance, assessed

4

using subjective and objective measures. We also examine the effect of multiple moderators such as publication status, study design, and study settings.

This research offers two primary contributions. First, we connect the dots in the literature to help clarify the construct of work values and to provide a more solid understanding of its nature and relationship to other individual differences. This should help researchers and practitioners build a stronger foundation of knowledge in this domain through this thorough summary of various aspects of work values. Second, results from the meta-analysis improve our understanding of the criterion-related validity of work values and inform decisions regarding including values in selection systems. These two contributions may also help revive interest in work values in industrial and organizational psychology by extending our understanding of the relationship between work values and job performance. The last decade has witnessed similar efforts to update meta-analytic findings on the utility of other work preferences, namely vocational interests, in predicting job performance (Nye et al., 2012, 2017; Van Iddekinge et al., 2011). This study follows a similar methodological approach to help map the contribution of work values to organizational science and could be useful in further improving our prediction and understanding of job performance in the workplace.

In the following chapters, we will start by reviewing the literature on work values, job performance, and their relationship in Chapter 2. Then, in Chapter 3, we

will examine the hypotheses and research questions addressed by the current study. In Chapter 4, we will dig deeper into the methodology related to this meta-analytic study and provide our approach for the data collection and analyses. Then, in Chapter 5, we will report the meta-analysis results. Finally, in Chapter 6, we will discuss these results and offer directions for future researchers and recommendations for organizational practitioners based on the findings of the current study.

Chapter 2
Literature Review

2.1 Work Values

2.1.1 Overview

One of the earliest definitions of values was provided by Allport, who defined a value as "a belief upon which a man [sic] acts by preferences" (Allport, 1961, p. 454). Similar definitions have been provided more recently, including defining values as "general beliefs about the importance of normatively desirable behaviors or end states" (Edwards & Cable, 2009, p. 655). These definitions suggest the importance of understanding values as one of the essential individual differences that can help researchers and practitioners better understand and predict individuals' preferences and behaviors. As individuals put different levels of importance on different outcomes in life, their behaviors can vary accordingly.

Given this, values have long been studied by researchers from many fields, such as political sciences, philosophy, and psychology (Jin & Rounds, 2012). Nevertheless, the origins of values studies can probably be traced back to Eduardo Spranger's (1928) early work on values and needs with the conceptualization of six values: aesthetic, economic, political, religious, social, and theoretical (Rounds & Armstrong, 2014). Moreover, based on this conceptualization, the first systematic

study of values was conducted where these values were measured (Allport & Vernon, 1931).

The study of values related specifically to work also has a fairly long history. For instance, two of the early projects related to work values include the Career Pattern Study (Super, 1957), and the Work Adjustment Project in the early 1960's (Rounds et al., 1981). These early studies resulted in the two separate research programs of Dawis and Lofquist (1984) and Super (1995) that have driven the study of work values during the last century. One of the most influential theories in work values, and probably the most influential one to date, is the Theory of Work Adjustment (Dawis & Lofquist, 1984). The Work Adjustment Project at the University of Minnesota aimed to identify and define the basic needs relevant to satisfaction at work. The Theory of Work Adjustment postulates that an individual's satisfaction and satisfactoriness indicate work adjustment. Satisfaction happens when there is a correspondence between an individual's needs and the reinforcers of the work environment. Satisfactoriness happens when there is a correspondence between an individual's abilities and those required by the work environment. This theory has put needs and values correspondence/fulfillment as a basic tenet of the theory in predicting successful work adjustment.

The Minnesota Importance Questionnaire (MIQ; Rounds et al., 1981) has since been extensively used to measure work values and has also been adapted by

the U.S. Department of Labor's Occupational Information Network's (O*NET) database to expand its occupational characterization of work values and to build two relevant measures (Work Importance Locator; McCloy, Waugh, Medsker, et al., 1999b; and Work Importance Profiler; McCloy, Waugh, & Medsker, 1999). This adoption has enabled linking work values information to a wide range of occupations and expanded our understanding of how they relate to the workplace.

The second notable research program is the work importance study (WIS; Super & Šverko, 1995). In this global project, researchers have investigated cross-national differences in how values are applied in different individual roles (e.g., life, work, family, community). That involved studying the relative importance of work compared to other aspects of life and the type of rewards sought by individuals in these roles across cultures (Rounds & Leuty, 2020). Super also had a significant influence on the field when he initially developed the Work Values Inventory (Super, 1970) for his Career Pattern Study (Super, 1957), and researchers have continued to revise it (Super's Work Values Inventory-revised; Zytowski, 2006).

A recent review of individual attitude research covering the past decade has noted that interest in studying work values has continued to rise (Albarracin & Shavitt, 2018). Furthermore, the development of new work values measures has continued (Consiglio et al., 2017). This recent activity indicates that the work

9

values research domain is not dormant; however, additional efforts, hopefully including the current study, could be needed to regain broader interest in the study and application of work values in the organizational world.

2.1.2 Nature

Work values are fundamental to understanding the meaning of work, the reasons people work, and what people expect from their work and organizations in return (Rounds & Leuty, 2020). An investigation of the concept of work values shall extend our understanding of its relationship to individuals and work. In the following section, we review definitions of values and work values in the literature and discuss their components in more detail.

A value is defined as "an enduring belief that a specific mode of conduct or end-state of existence is personally or socially preferable to an opposite or converse mode of conduct or end-state of existence" (Rokeach, 1973, p. 5). According to Schwartz (1992, p. 4), values "(1) are concepts or beliefs, (2) pertain to desirable end states or behaviors, (3) transcend specific situations, (4) guide selection or evaluation of behavior and events, and (5) are ordered by relative importance." In focusing on values within the realm of work, work values have been defined as "shared interpretations of what people want and expect from work" (Nord et al., 1990, as cited in Rounds & Leuty, 2020, p. 509); "prioritized guiding beliefs that employees hold about desired end states or ways of behaving that manifest

themselves in work contexts" (Schleicher et al., 2011, p. 140); and "individuals' characteristic pattern of preferences for certain work outcomes, goals, or objectives" (J.-I. C. Hansen & Wiernik, 2017, p. 409).

Based on the overlapping components of these definitions of general and work values, we can state that *work values are personal beliefs about the prioritized importance of work-related outcomes*. That entails a discussion of the following components: (a) values are personal beliefs, (b) about outcomes, (c) with different levels of importance, and (d) are work-related. We dive deeper into the details of each component in the following sections.

A) Values Are Personal Beliefs.

We, as individuals, believe in different things. The beliefs we hold exert a powerful effect on our lives as they orient us to desirable outcomes and act as standards for our judgments, decision-making, and behaviors. When individuals develop values, they are stored in memories as interrelated cognitive entities/structures organized in hierarchies and can be dynamically reorganized based on our environments (Brown & Crace, 1996). Values are considered cognitive representations of our needs and how we would prefer to fulfill these needs. No wonder these developed cognitive transformations of needs form a basis for motivation and goal setting when they act as standards that direct our behaviors

towards desirable end states (Brown & Crace, 1996; Rokeach, 1973). In this view, "values serve as the basis for self-regulating cognitions and provide the basis for judging the utility of extrinsic reinforcers" (Brown & Crace, 1996, p. 2).

According to Brown and Crace (1996), values play a role analogous to that played by cognitive schemas, which help individuals interpret their experiences in a certain way. Similarly, values may act like "cognitive filters" used to evaluate the valency of external reinforcers (i.e., rewards/outcomes). Furthermore, as cognitive schemas can be faulty and ineffective, values can be faulty too, where they disorient individuals from perceiving and pursuing normatively desirable standards and hinder them from being effective in their roles and communities (Brown & Crace, 1996). Brown and Crace (1996) also discuss values' central role in "the selection of, and subsequent satisfaction with, life roles" (p. 1). They emphasize how satisfaction is influenced by making decisions aligned with values.

Although the cognitive aspect of beliefs has been the main focus of explaining the conceptualization of values so far, that is not meant to suggest that beliefs are without affective and behavioral components (Brown, 2002). Researchers have made distinctions between cognitive beliefs and affective beliefs and pointed out that all beliefs must have some degree of both affect and cognition and that there may not be a pure expression of one or the other, but some beliefs are "more cognitive," and others are "more affective" (Trafimow & Sheeran, 1998, p. 379).

The difference between cognitive and affective beliefs can be illustrated in a recent study about the factors related to an appraisal of disease threats such as COVID-19, where the researchers mentioned perceptions of disease risk and disease severity as cognitive beliefs, and worry about the disease as an affective belief (Magnan et al., 2021).

We hold beliefs related to our feelings about subjects and beliefs related to specific behaviors. The cognitive, affective, and behavioral aspects of beliefs in terms of values can be interconnected. Values "are the basis of affective reactions" (Brown & Crace, 1996, p. 6), and at the same time, emotions affect our beliefs (Fiedler & Bless, 2000). Beliefs influence our perception of not only which outcomes are deemed desirable but also of which outcomes are undesirable (Rokeach, 1973). Finally, beliefs, including beliefs about social norms and beliefs about behavioral control (i.e., the degree to which an individual believes they can perform a given behavior), are known to affect individual behavior through shaping behavioral intentions, as proposed by the theory of planned behavior (Ajzen, 1991).

B) About Outcomes.

Values are specific beliefs. They pertain to beliefs about which outcomes the individual wants to attain. In life and work, individuals are goal-driven and are motivated to achieve goals that provide them with desirable rewards (Vroom,

1964). These rewards need not be only materialistic or tangible; they can be desirable psychological states, relationships, conditions, goals, or objectives (J.-I. C. Hansen & Wiernik, 2017). These can be different ways for individuals to fulfill their innate needs. In one example, individuals may desire the outcome of a high salary to fulfill the need for compensation and financial sufficiency. In another example, individuals may seek to fulfill their basic psychological needs of competence, autonomy, and relatedness through their roles at work (Deci et al., 2017). As will be discussed later under Taxonomy, different classifications have been developed to organize different outcomes, but these desirable rewards in all cases can guide individuals to work in environments that provide what the individual wants from the workplace. The more the organization and work role provide rewards that align with an individual's interests and standards, the more satisfied the individual would be (Dawis & Lofquist, 1984). In a way, these rewards can be thought of as why individuals seek work in the first place.

C) With Different Levels of Importance.

Individuals may desire to get as many rewards of all sorts as possible every day and everywhere; however, environmental circumstances and the limitations of time and resources can require individuals to make choices and set priorities. These priorities or varying levels of importance regarding desirable rewards differ between individuals. This prioritization concerning the importance of different

14

outcomes to an individual is exactly what makes general and work values useful in decision-making as they act as individuals' north star in deciding on what to pursue next out of various alternatives.

This individual difference in outcome preferences can be attributed to the "value system" proposed by Rokeach (1973). He defined this as "an enduring organization of beliefs concerning preferable modes of conduct or end-states of existence along a continuum of relative importance" (Rokeach, 1973, p. 5). This value system can be thought of as a hierarchical organization of values based on their relative importance level to the individual. That conceptualization can help explain the conflict resulting from competing values such as high pay and altruistic work, where individuals may need to pursue one over the other according to their personal level of priority/importance (Rounds & Leuty, 2020). When individuals encounter multiple options that can satisfy their needs, the option that aligns with their most important value is likely to be chosen, and in the absence of options that serve to satisfy their needs, individuals may choose the option that least conflicts with their values (Brown & Crace, 1996). Also, individuals may put more relative importance on values that lead to outcomes not adequately fulfilled (Rokeach, 1973), such as the case with employees from impoverished communities valuing salary and compensation highly because they lack it. In contrast, wealthy employees may value it significantly less because they already possess it.

Furthermore, Brown and Crace (1996) proposed that what sets highly functioning individuals apart from poorly functioning individuals is how well their value system is developed and their values are prioritized. When individuals do not have clear standards of behavior or a sense of the end states they desire, this lack of clarity can result in a lack of motivation, poor decision-making, and dissatisfaction. This suggests that a clear and more developed personal value system can be one of the secrets to success and effectiveness.

D) Are Work-Related.

The main difference between life and work values is that work values are context specific. This context narrows the broad domain of values to the subset of values applicable to work-related situations and environments. This situational specificity allows for identifying values that influence employees' decisions and behaviors the most at work. This differentiation has been reflected in the conical structure hypothesized and empirically supported by Elizur and Sagie (1999), where the bottom of this conical structure represents the broader area of life values while the top represents the narrower work values area (see Figure 1). An expanded discussion of the relationship between life and work values is presented later under Construct Specification.

Figure 1

An Adapted Schematic Presentation of the Structure of Life and Work Values.

Adapted from Elizur and Sagie (1999).
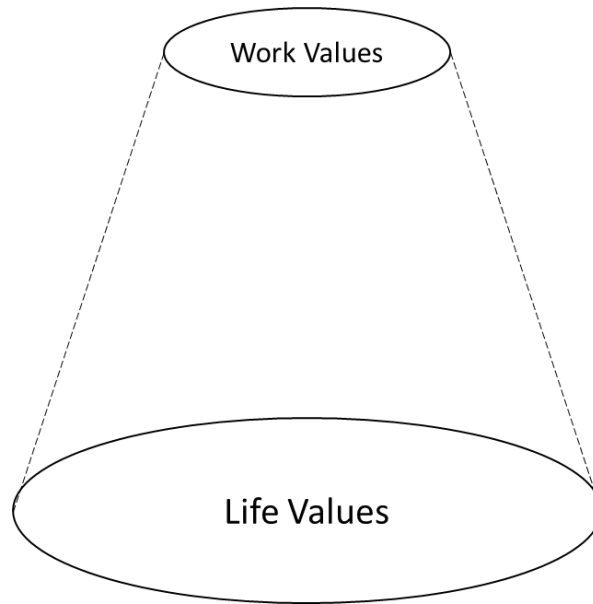
2.1.3 Antecedents

Insights on the origins of work values can be found in early research, which focused on studying values as a dependent variable to understand their development and evolution, or why individuals have a specific set of values (Keller et al., 1992; Schleicher et al., 2011). In general, as with other individual difference constructs such as personality, the antecedents of work values can be categorized as

genetic or environmental (Schleicher et al., 2011). Environmental factors include family, early experiences, and sociocultural variables (Schleicher et al., 2011). For example, Halaby (2003) found that "advantaged" individuals from wealthy families who had more schooling opportunities expressed higher interest in high-risk "entrepreneurial" work values (as opposed to low-risk "bureaucratic" work values) compared to individuals from impoverished families with fewer educational opportunities. In addition, Cemalcilar et al.'s (2018) meta-analysis found a significant effect of parents' work values on their children's work values. They also noted that the similarity of father-child work values decreased as children grew older, suggesting the influence of other socio-cultural factors, such as peer influences.

However, genetic factors may also play a role in the development of individuals' work values. One of the great resources we have on this subject is the study conducted by Keller et al. (1992), which administered the Minnesota Importance Questionnaire of work values (MIQ; Rounds et al., 1981) to 23 monozygotic and 20 dizygotic reared-apart twin pairs. That study design aimed at testing the contribution of genetic factors (as opposed to environmental factors) to the twins' work values preferences. After performing univariate and multivariate analyses, their results suggested that, on average, 40% of the variance in work values is attributed to genetic factors, while about 60% can be attributed to

environmental factors and error variance. There was also notable variation across the work values; for instance, the work values of altruism and autonomy were more associated with environmental factors. On the other hand, the achievement and status work values were more associated with genetic factors. Overall, the findings of this study suggest the importance of genetic factors in human preferences.

2.1.4 Construct Clarification (Work Values vs. Related Individual Differences)

Organizational science has long studied work values as one of multiple individual differences. Given the potentially overlapping conceptualization of various individual differences, it is essential for the sake of construct clarity to examine work values in relation to other relevant individual difference constructs. Construct clarity is essential for understanding the construct of concern and its similarities and differences from other related constructs (L. Chen et al., 2016; M. Zhang et al., 2016). In this section, we will compare values to relevant individual differences; then in the next section, we will compare work values to other value-based constructs.

As we consider the comparison of values to personality, attitudes, motivation, beliefs, needs, vocational interests, and goals, it is essential to note that researchers have made progress towards integrating these individual differences

into comprehensive frameworks to enable using them together for different reasons, including vocational counseling. These efforts to move beyond domain-specific assessments were supported by results related to trait complexes or constellations across domains (Rounds & Leuty, 2020). Researchers have discussed the different analytical and theoretical approaches in the literature regarding these integration attempts (Rounds & Armstrong, 2014). However, one notable effort toward that integration goal, based on Holland's (1985) theory of personality types and work environments that views occupational choice as an expression of personality, was the development of The Strong Ring model (Armstrong et al., 2004) followed by the development of the Atlas of Individual Differences model (Armstrong et al., 2008; Armstrong & Rounds, 2010). The basic idea of these models is to map distinct individual differences in a circular/complex structure based on their empirical relationships to each other and the RIASEC vocational interest dimensions based in Holland's theory. In this approach, the more variables are related, the more they will be placed adjacent to each other on that graph. See Figure 2, Figure 3, and Figure 4 for examples of the Strong Ring, the Atlas model using personality, and the Atlas model using work values, respectively.

Figure 2

An Example of the Strong Ring (Reproduced with permission; Armstrong et al., 2004, p. 309).
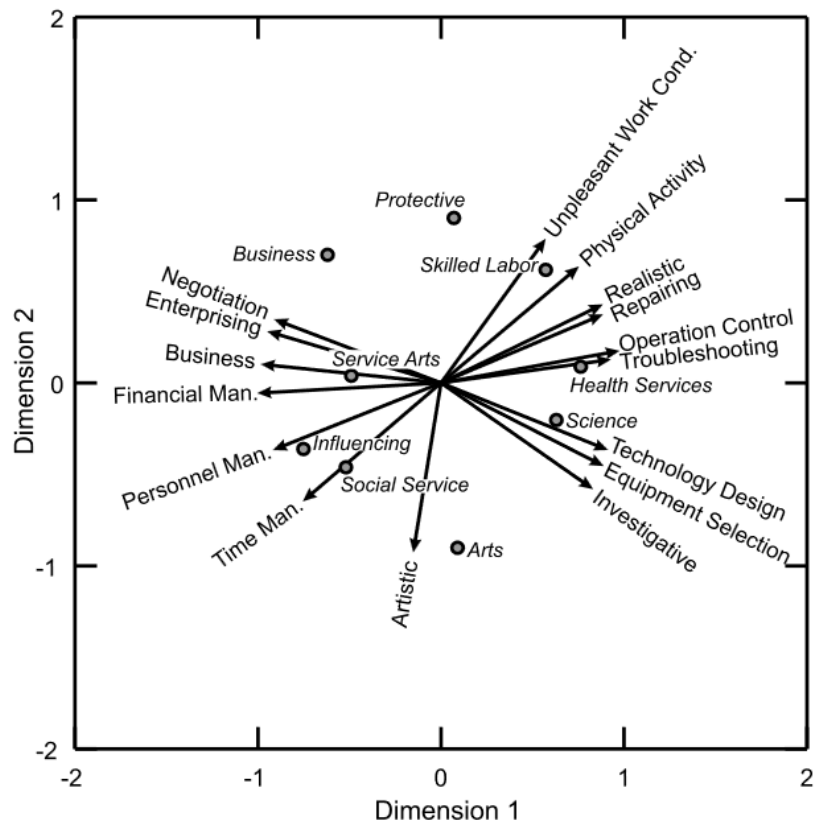
Note. This graph shows an integration of O*NET characteristics into the Strong Ring. Italicized terms represent interest areas. Cond. = Condition; Man. = Management.

Figure 3

An Example of the Atlas Model - Using Personality (Reproduced with permission; Armstrong et al., 2008, p. 7).
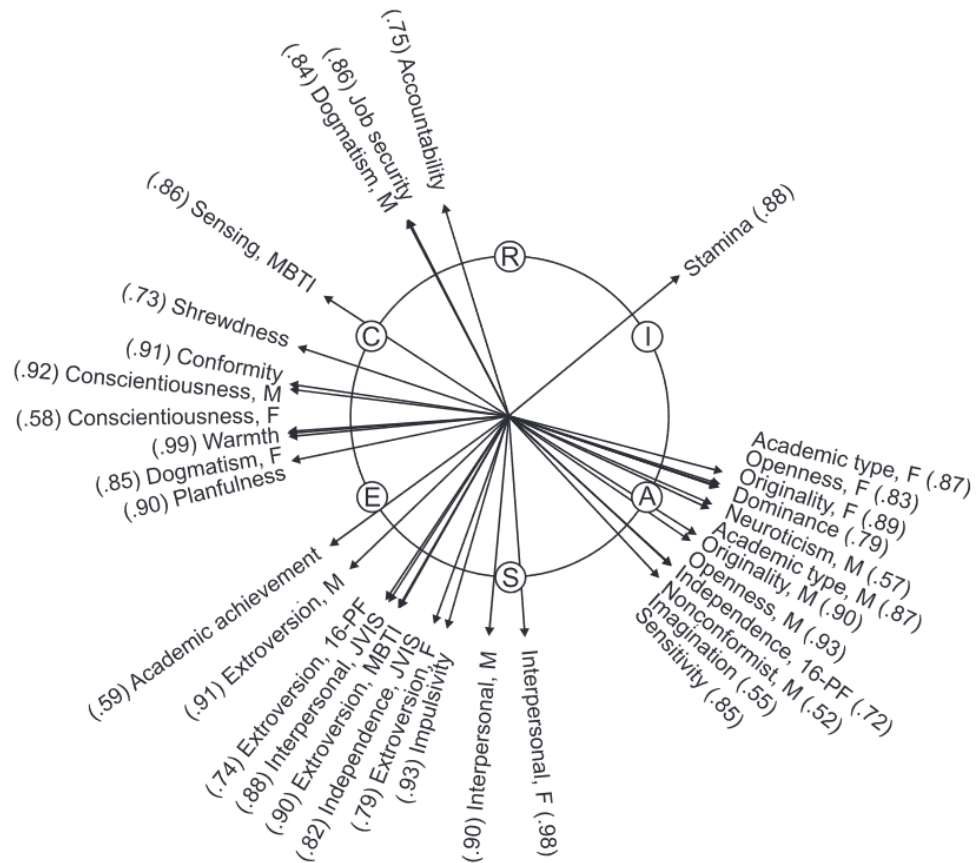
Note. The graph shows individual characteristics integrated into a two-dimensional RIASEC interest circumplex. R^2 values from property vector fitting analyses appear in parentheses. M = male; MBTI = Myers-Briggs Type Indicator; F = female; 16-PF = 16-PF personality inventory; JVIS = Jackson Vocational Interest Survey.

Figure 4

An Example of the Atlas Model - Using Work Values(Reproduced with permission; Rounds & Armstrong, 2014, p. 110).
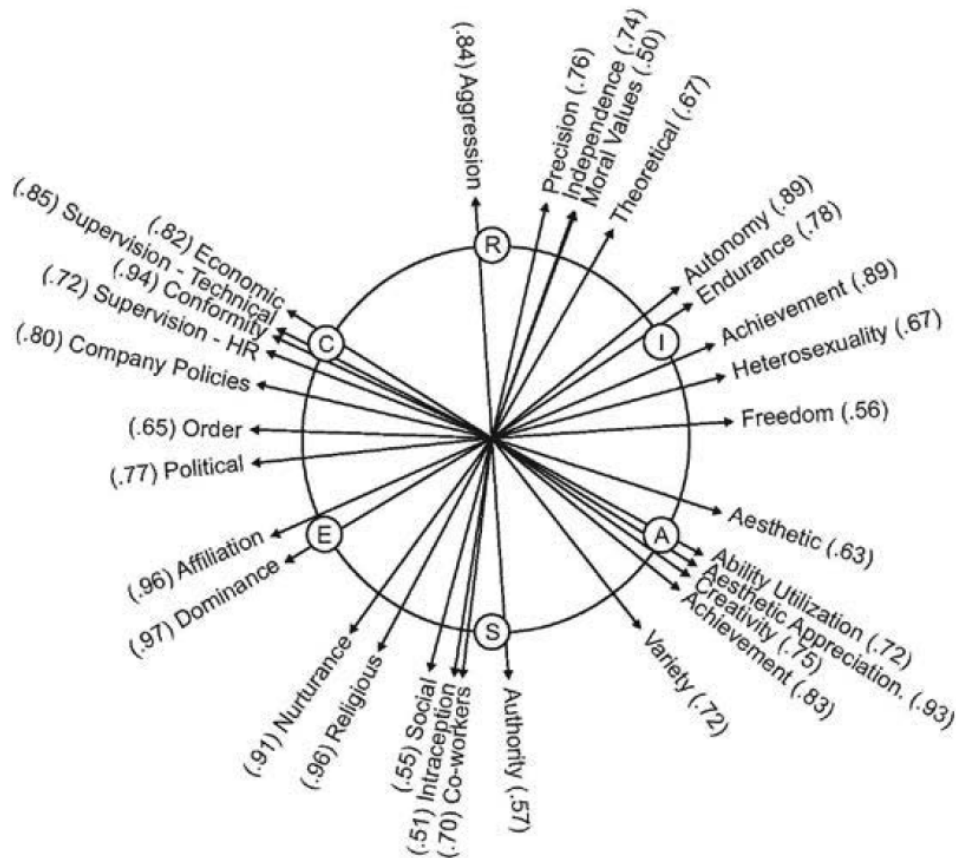
Note. This graph shows property vector fitting results for O*NET occupational value ratings, Edwards Personal Preference Schedule needs, and Study of Values. Values in parentheses represent the variance accounted for (R^2) in the analyses. R = Realistic; I = Investigative; A = Artistic; S = Social; E = Enterprising; C = Conventional.

Work Values vs. Personality

At first glance, it can be expected that values may differ from personality on two accounts. First, they differ in nature, given that values are categorized as prioritized beliefs (Rounds & Leuty, 2020), while personality is considered enduring traits and dispositions (McCrae, 2010). Second, they differ in stability, as personality is considered to be highly stable and not necessarily influenced substantially by the environment, whereas work values develop as individuals grow, and their evolution is more susceptible to environmental changes, especially during post-secondary education and after exposure to work experiences so they are more malleable compared to personality (Zhang et al., 2007).

However, few studies have investigated the relationship between work values and personality (Zhang et al., 2007). Studies on that topic have focused on empirically evaluating the relationship between work values and personality either in the form of correlates (e.g., correlation analysis) or by using personality as a predictor of work values (e.g., regression analysis). For example, in a study conducted in the manufacturing industry (Kubat & Kuruuzum, 2009), researchers found moderate relationships between personality traits and work values. Their hierarchical regression analysis showed that conscientious and emotionally stable employees gave more importance to intrinsic work values, while agreeable and emotionally stable ones had higher importance for extrinsic work values. Their

correlation analysis indicated that conscientiousness, openness to experience, and agreeableness had low to moderate relationships with 11 work values in Super's Work Values inventory.

Similarly, other researchers have looked at whether personality traits could predict work values, and their results have supported this prediction (Furnham et al., 2005; Zhang et al., 2007). Furnham et al. (2005) found that the predictors of personality traits, age, and gender in combination explained between 5% and 13% of the variance in work value scores. Furthermore, Berings et al. (2004) found not only that traits of the Five Factor Model of personality (FFM; McCrae, 1989) could predict all work values but also that all FFM dimensions were related to work values. Their correlation analysis indicated modest to moderate relations, not exceeding .44. They found that conscientious individuals exhibited work values that are of importance to most organizations, such as preferences for Structure, Rationality, Autonomy, Influence, Competition, and Innovation, whereas extraversion was a predictor of people-related work values, such as preferences for Influence, Teamwork, and Community. Given that, employees high on the personality traits of conscientiousness and extraversion can be an appealing target for the labor market.

Also, Berings et al.'s (2004) regression analysis showed that work values have incremental validity over personality traits in predicting vocational interests.

Their results of the intercorrelation matrix and multiple regression analyses suggested that personality traits and work values share a substantial amount of variance around 20%. That suggests they are related, yet with considerable unique variance; therefore, they are not interchangeable. Berings et al. argued that this could be explained through the FFM model of personality (McCrae, 2010), where work values could be considered at one level of psychological adaptations (more susceptible to environmental factors), while personality is categorized at the other level of psychological tendencies (due to substantial heritability). Given our previous discussion of the antecedents of work values, this differentiating view may not tell the whole story as work values were suggested to have a substantial genetic component as well (Keller et al., 1992).

However, Staw et al. (1986) provided two potential explanations for why we should expect personality to predict work values or job attitudes. First, it could be that affective disposition influences how people view their world, including their jobs. Second, individuals with different personalities may seek corresponding characteristics of their work environment; for example, individuals with high openness to experience could pursue jobs that offer opportunities for a variety of tasks or creative tasks. These propositions seem to align with the occupational gravitational hypothesis that individuals, throughout their careers, will sort themselves into jobs that match their personalities, interests, and abilities (Wilk et

26

al., 1995). Individuals may prefer jobs that offer outcomes congruent with their personality and work values simultaneously, which may hint at the conceptual overlap between them to some extent.

Although the previous propositions attempted to explain why personality predicts work values, it seems that our quest to find a direct theoretical link between personality and work values was addressed by early studies. Guth and Tagiuri (1965) proposed that values are not only closely related to personality but are part of it. Values are seen as the guidance system personality uses when faced with choices of alternatives. In addition, this view proposes that values are a very stable feature of personality. Along the same lines, Allport (1961) suggested that "values exist at one level of a hierarchical organization of personality; thus, work values, as an extension of values, should be an integral part of personality" (Hales & Hartman, 1978, p. 16). Based on that, it can be expected that work values are related to personality. Thus, more conceptual development in future work to explain this relationship may be useful.

Work Values vs. Attitudes

An attitude is "a relatively stable evaluative disposition toward a specific person, situation, or other entity, which varies in intensity and favorability and tends to guide an individual's responses to that object" (Schleicher et al., 2011, p. 137). Work values and attitudes overlap in that they guide individuals in making

27

decisions, but they also have various differences. Unlike attitudes, work values include prioritization of beliefs (rather than a focus on valence), are more stable, and are less focused on specific targets (Schleicher et al., 2011).

Researchers have traditionally examined the two domains of attitudes and values together, given their strong relationship and similarities (e.g., Schleicher et al., 2011). This trend could be traced to the early studies on values by Rokeach (1968) when he suggested that the study of values "may prove to be the long-awaited 'unifying theory' capable of integrating psychology's study of attitudes and human behavior" (Schleicher et al., 2011, p. 140). Attitude researchers have long been interested in values, which have been thought of as attitudes towards abstract entities/ideas (Albarracin & Shavitt, 2018). For example, an individual holding universalist values is likely to have a favorable attitude towards equality-oriented policies (Albarracin & Shavitt, 2018).

Researchers have made considerable efforts to integrate values, attitudes, and behaviors into a guiding framework. Driven by a lack of empirical causal modeling approaches in examining values, Homer and Kahle (1988) have proposed the Value-Attitude-Behavior Hierarchy cognitive model to explain the relationship between these variables. They stated that values inform attitudes through a causal chain that starts from abstract values affecting midrange attitudes, which subsequently influence specific behaviors. This model emphasizes the mediating

role of attitudes contributing to the values and behaviors relationship. In addition to Homer and Kahle's (1988) results that supported their model, other researchers have also found further support for these relationships.

For example, research has examined the cross-cultural validity of the Value-Attitude-Behavior Hierarchy model using samples from Brazil, New Zealand, and South Africa (Milfont et al., 2010). Results indicated that self-interest values predicted negative attitudes toward environmental issues, while altruistic values predicted the opposite. These attitudes had a moderate relationship with environmental behaviors. Their results also indicated that environmental attitudes fully mediated the influence of values and perceived environmental threats on ecological behavior, providing further support for the Value-Attitude-Behavior Hierarchy model. Furthermore, a series of recent studies (Wolsko et al., 2016) found expanded support for the model, where donation for an environmental cause (i.e., behavior) was increased after changing the framing of the cause and linking it to broader values, as that, in turn, led to shifting toward more favorable attitudes towards the cause.

Work Values vs. Needs

Needs are "internal forces that are essential for supporting life and growth" (Kanfer et al., 2017, p. 340). When needs are unmet, they create states of physical and psychological tension that energize individuals to take action (Kanfer et al.,

2017; Murray, 1938). Needs are not permanently satisfied; they operate cyclically, where the strength of unmet needs is based on the tension they elicit, and satisfying these unmet needs becomes rewarding (Kanfer et al., 2017). Previous studies have used needs and values in different ways. In one approach, researchers viewed them as interchangeable; such is the case with one of the seminal models of human needs known as Maslow's (1943, 1954) hierarchy of needs. This hierarchy of needs postulates that five needs are hierarchically organized in terms of their prepotency (i.e., urgency for survival): physiological, safety, love, esteem, and self-actualization needs. Once the most prepotent deficiency needs (physiological and safety) are satisfied, individuals pursue higher level, less prepotent growth needs (love, esteem, and self-actualization) that become more influential.

Later studies, especially in the organizational sciences, have focused more on basic psychological needs (e.g., Self Determination Theory; Deci et al., 2017). Satisfaction of the basic psychological needs of autonomy, relatedness, and competence have been linked to intrinsic motivation, satisfaction, and a myriad of positive organizational outcomes (Deci et al., 2017). In another conceptualization of the relationship between needs and values, Rokeach (1973) considered needs as emerging from biological necessity, whereas values are the cultural and environmental representation of these biologically driven needs (Rounds & Armstrong, 2014).

However, researchers involved in the Work Importance Study clarified the relationship between needs and values (Super, 1995). Super (1995, p. 56) developed a model that includes needs, values, and interests, where they were defined, and their relationship to each other was explained as follows.

- **Needs are wants, manifestations of physiological conditions such as hunger, and they are related to survival. They are the result of interaction between the person and the environment, and some thus manifest in the seeking of help from others and, in more refined form, in the need to help others.**

- **Values are the result of further refinement through interaction with the environment, both natural and human. The result of socialization is the establishment of the types of objectives that people seek in order to satisfy their needs. The need for help thus becomes love, and the need to help becomes altruism.**

- **Interests are the activities within which people expect to attain their values and thus satisfy their needs. Valuing the well-being of others (altruism) leads a person to choose a social service occupation such as social work, teaching, some aspects of personnel work, or even a business or industrial enterprise.**

According to this theory of the structure of personality, needing (or wanting) something would lead to valuing something (abstract) that can meet that need; then, valuing leads to action/activity (interests) that can fulfill the satisfaction of this need, for instance, through certain occupations (Super, 1995). This conceptualization allows us to answer the following questions in order: why people do things, what will needs make people seek, and which activities are likely to be sought to achieve this goal (Super, 1995). This hierarchical conceptualization sets work values as a lower-order operationalization of higher-order needs. Other researchers have also agreed with that conceptualization. For instance, Brown and Crace (1996, p. 2) discuss that values "determine the way needs are met in the family, at work, and in the community."

Furthermore, Schwartz (2012) affirmed that proposition by suggesting that each of the ten values in the Schwartz theory of basic human values supports one or more of the basic human needs ("needs of individuals as biological organisms, requisites of coordinated social interaction, and survival and welfare needs of groups," p. 4). Accordingly, there is a solid link between needs and values, as needs are expected to be the underpinnings of values. A need can be fulfilled by pursuing one or more values, and pursuing a value can simultaneously fulfill one or more needs.

Work Values vs. Motives

        To discuss the relationship between work values and motives, an understanding of what motives are is needed. In examining the literature, the differences between needs and motives were unclear, and in many situations, both terms were used interchangeably to represent the same thing (Kanfer et al., 2017). Although both needs and motives are primarily considered nonconscious parts of the individual motivational system, thus necessitating measures such as projective assessments (e.g., Sokolowski et al., 2000) to capture these implicit variables (Kanfer et al., 2017), just describing them using the broad term of motivation to capture all determinants of action does not tell the full story (McClelland, 1985).

        Biernat (1989, p. 70) defines motives as "nonconscious needs, wants, desires, or 'recurrent concerns about goal states' (McClelland, 1985)". She continued to describe motives through their function of energizing, orienting, and selecting behavior, making one active in goal pursuit, more sensitive to goal cues, and more likely to quickly learn what it takes to reach a goal. However, a recent study has clarified the differentiation between motives and needs (Schüler et al., 2013). Schüler et al. investigated the two closely related conceptualizations of needs and motives by examining the theories of Basic Psychological Needs Theory—a subset of the Self Determination Theory (Deci et al., 2017)—and the Motive Disposition Theory (McClelland, 1985) and evaluated their relationships to

positive outcomes. Specifically, they investigated motives as moderators of the relationship between basic needs satisfaction and positive outcomes such as well-being and flow.

Schüler et al. (2013) discuss that, based on these two theories, basic needs satisfaction is concerned with the universal satisfaction of all individuals, regardless of their individual differences (e.g., gender, social class, personality traits, consciously rating needs as important to them), upon fulfilling the three innate (rather than learned) needs of competence, relatedness, and autonomy. This basic need satisfaction accounts for individual intrinsic motivation, leading to well-being and flow, and is necessary for optimal functioning. On the other hand, motives are preferences for certain types of incentives and can be developed in early childhood based on operant and Pavlovian conditioning concepts. Through these learning experiences, individuals acquire stable and strong motives. These implicit motives represent the "capacity to experience the attainment of a certain type of incentive as rewarding; as a consequence, it orients the individual towards cues related to the incentive and energizes and selects behavior aimed at incentive attainment" (Schultheiss & Hale, 2007, p. 13).

In this way, motives are activated and energized by cues of a situation that can offer a preferred incentive to the individual, leading to satisfaction upon engaging in this endeavor. For instance, an individual with an achievement motive

could require a situational incentive, such as a chance to excel, in association with feelings of competence, to experience flow and well-being (Schüler et al., 2013). Accordingly, motives are activated by situational incentives, leading individuals towards behaviors directed towards motive satisfaction (Schüler et al., 2013). Schüler et al. focus on three main motives that are parallel to basic psychological needs: the achievement motive, which pertains to the desire to perform better; the affiliation motive, which pertains to the desire to experience warm interpersonal relationships with others; and the power motive, which pertains to the desire to have an impact on others. Individuals with high levels of these motives direct their future behavior to cues that promise the attainment of the incentives of achievement, affiliation, or power, which individuals have found in the past to be rewarding (e.g., they were associated with positive emotions; McClelland, 1985; Schüler et al., 2013). That is why they proposed that motives moderate the relationship between need fulfillment and outcomes, such that individuals with a stronger achievement motive, for example, would have even more positive experiences when feeling competent compared to others with a lower achievement motive.

In their results, Schüler et al. (2013) found that when predicting domain-specific well-being and flow (cues of situational specificity), the achievement motive moderated the positive effect of competence satisfaction. Individuals high

on the achievement motive benefited more from competence satisfaction and suffered more from need frustration. However, in the case of predicting general well-being and flow, there was no moderating effect for motives, nor did motives directly affect the outcomes. That supports the notion that satisfaction of basic needs is predictive of general-well being and flow universally regardless of motives, supporting the effect of need satisfaction on optimal human functioning and attaining general positive outcomes. They concluded by discussing the practical recommendation of providing employees with environments with corresponding cues and incentives based on their motive levels. They called for future research to directly examine the conceptual differences and interactions between needs and motives.

After having clarified the construct of motives, this should inform our understanding of motives' relationship with work values. Motives and work values are both components of the motivational and guidance system that individuals use to direct their future actions. Their focus is different, however. The motive strength, in relation to the strength of other motives within a person, guides individual behavior, whereas it is the work value priority that drives cognitively based decisions at work (McClelland, 1985). Also, there are differences in their assessment. The implicit nature of motives would not allow people to accurately self-report the strength of their motives, while the cognitive nature of work values

allows individuals to describe their values using traditional self-report assessments (Biernat, 1989).

In line with these differences, Biernat (1989) has proposed multiple differentiations between motives and values and conducted two studies to test them. She proposed that (a) the achievement motive and achievement value would be uncorrelated, (b) motives would predict operant/spontaneous behaviors whereas values would predict respondent/stimulus-driven behaviors, and (c) there is an interaction effect between these variables where individuals with high motive would perform better when they are high on the value too (compared to those with a low level of the value). Results provided support for her hypotheses. Accordingly, motives, values, and other motivational factors work in tandem to determine a resultant motivational tendency that directs individual behavior depending on the nature of the situation.

Work Values vs. Vocational Interests

Vocational interests are "individuals' characteristic patterns of preferences for certain work activities and work environments" (J.-I. C. Hansen & Wiernik, 2017, p. 409). They are described in terms of how appealing or engaging an activity, topic, environment, or way of working is to the individual (J.-I. C. Hansen & Wiernik, 2017). Although both work values and vocational interests are treated as work preferences, the emphasis is on whether it is an individual's preference for

an activity (vocational interest) or an individual's preference for an outcome (work values). Also, from an operational point of view, interests pertain to liking and disliking, whereas work values pertain to importance and unimportance (Rounds & Leuty, 2020).

One prominent feature of conceptualizing the relationship between vocational interests and work values is their position in the personality structure described by Super (1995). He defined interests as "the activities within which people expect to attain their values and thus satisfy their needs" (Super, 1995, p. 56). This conceptualization positions vocational interests at a lower and more detailed level than work values and makes interests closer to pursuing individual behavior. From a cognitive standpoint, after an individual identifies which values shall be the reference point for fulfilling an unmet need, the individual may prefer particular activities that allow for applying this value and satisfying the unmet need. That makes an interest one of the many expressions or manifestations of a value (Rounds & Leuty, 2020).

The link between interest areas and value patterns has been examined and supported by previous studies using property vector fitting (Armstrong et al., 2008). Using O*NET data, Armstrong et al. (2004) found that the work values of social relationships (e.g., coworkers, authority) were aligned with social interests; the values of creativity, ability utilization, and variety aligned with artistic interests;

work morality and independence values were aligned with realistic interests; and the values for adequate supervision and clear company policies aligned with conventional interests (Rounds & Leuty, 2020). Nonetheless, a longitudinal study examined the incremental validity of work values over vocational interests. The results indicated that work value correspondence accounted for 4% to 29% of the variance in job satisfaction after controlling for interest congruency (Rounds, 1990). Accordingly, vocational interests and work values are different approaches to/levels of individuals' expressions of their tendencies towards satisfying their different needs.

Work Values vs. Goals

Goals are "internal representations of desired states that direct attention, organize action, and sustain effort aimed at achieving those states" (Kanfer et al., 2017, p. 343). Goals drive individuals to attain the satisfaction of achieving specific targets through concretely focusing on specific stimuli such as money, prestige, or power (Fornerino et al., 2011; Jolibert & Baumgartner, 1997). Also, goals have hierarchical organizations, where the higher level or distal goals reside at the top of the hierarchy (e.g., earning a Ph.D. degree) and the lower level or more proximal goals are closer to the bottom of the hierarchy (e.g., passing Ph.D. comprehensive exams; Kanfer et al., 2017). Despite these levels, all such goals are considered at a lower level than the broader cognitive representations of work values' end states

and desirable outcomes. Work values represent a higher level of abstraction than goals, as they are concerned with broad outcomes and end states, ideals, or what one must do; on the other hand, personal goals are more concrete and pertain to what one wishes to do (Jolibert & Baumgartner, 1997).

That conceptualization puts values farther from intentions and behaviors and allows the more proximal goals to have more explanatory power for intentions and behavior (Jolibert & Baumgartner, 1997). This position was supported in a cross-cultural study that hypothesized that goals would have greater explanatory power (compared to values) for business students' intentions to study abroad (Fornerino et al., 2011). Accordingly, goals are considered the nexus that connects the "why" of action (e.g., work values) to the "how" of purposive action (Kanfer et al., 2017). Furthermore, both values and goals have been used as operationalizations of person-organization fit, and Kristof-Brown et al. (2005) proposed that, given that goals are less stable than values, person-organization fit based on goals may have a smaller effect size compared to that of values. Their results have supported that proposition, as they found that the estimated effect size of values-based fit (.51) was larger than that of goals-based fit (.31) in predicting job satisfaction. This finding supports the stability of values as they are more rooted in individuals' cognitive structures compared to goals, and thus could be more valid in congruency-based predictions of organizational outcomes.

40

Work Values vs. Beliefs

A belief is defined as "the cognitive act or state in which a proposition is taken to be true" (Egan, 1986, p. 315). Beliefs define our sense of reality; in other words, they are the system/mechanism through which we make sense of the world (Usó-Doménech & Nescolarde-Selva, 2016). Beliefs can be as general as our worldviews or as specific as they pertain to a particular subject or issue (Stern et al., 1995). Although we have earlier defined work values as personal beliefs, this operationalization of values as cognitive entities or beliefs should not be treated as an exhaustive representation of the domain of beliefs. Work values are one type of belief through which we hold our guiding principles as applied to and limited to the domain of work concerning our preferences for work-related outcomes.

However, there are other operationalizations of beliefs in industrial/organizational psychology. For instance, the Theory of Planned Behavior (Ajzen, 1991) stipulates that beliefs and attitudes inform our behavioral intentions, resulting in actual behavior. The theory mentions two types of beliefs: normative beliefs, which are an individual's perceptions about normative social pressures (what others think should or should not be done); and control beliefs, which are an individual's perceptions of the feasibility of performing a behavior and the presence of factors that may affect doing this behavior.

Along similar lines of connecting beliefs to behavior, Stern et al. (1995) presented a model of ecological concern connecting social structures, values, beliefs, attitudes, and intentions to behavior. This model can guide us in further understanding the relationship between work values and beliefs. As seen in Figure 5 based on the adaption of Milfont et al. (2010), the model hypothesizes that social structures and the environment shapes an individual's values, which affects our general beliefs and worldview. Values and worldviews may act as filters for new information/ideas, such as when they are aligned, further influencing the formation of attitudes and intentions, leading to the behavior.

Stern et al. (1995) discussed that they treated values as an antecedent of worldview or general beliefs for multiple reasons. First, values may be formed earlier in life within the family, while general beliefs may be formed by broader and later environmental inputs or experiences. Second, values may seem more general than general beliefs as they involve broad dispositions central to personality, whereas general beliefs can pertain to particular domains of life. Third, values are considered more stable as they are less susceptible to changes over time and can be challenged only for their desirability or appropriateness; on the other hand, beliefs are more vulnerable to empirical challenges. They called for further empirical studies to disentangle the causal link between values and beliefs. Based

on this conceptualization, we can expect work values to inform general and specific work-related beliefs.

Figure 5

A Schematic Causal Model of Determinants of Behavior (Reproduced with permission; Milfont et al., 2010, p. 2793).
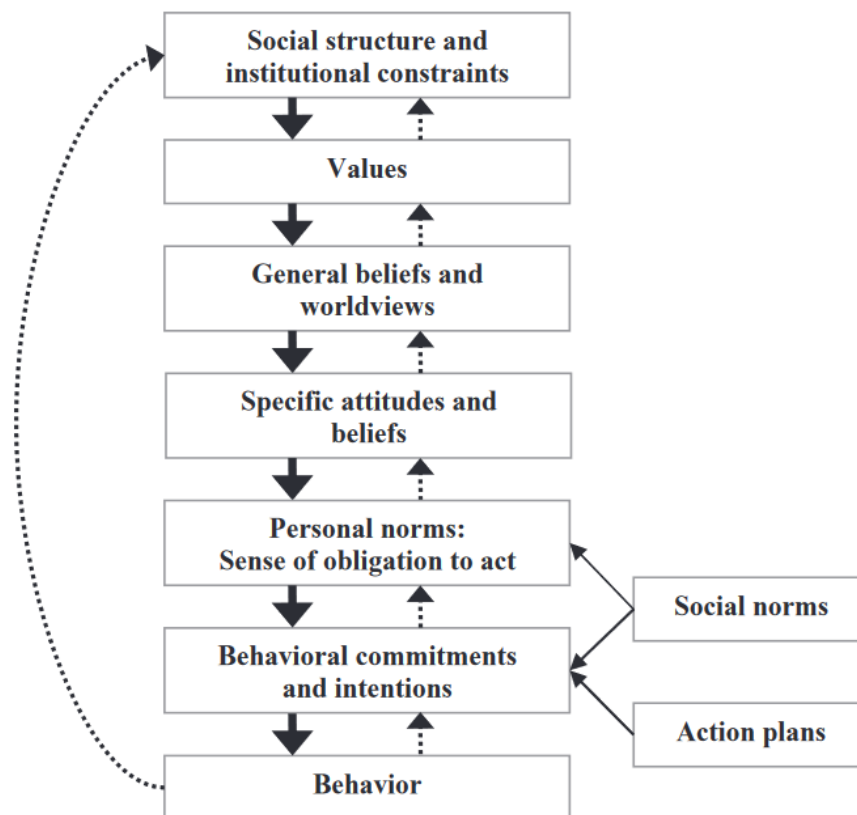
2.1.5 Construct Specification (Work Values vs. Value-Based Constructs)

Given that values have been studied across several research areas and domain-specific value constructs have been developed, we will discuss work values' relationship with individual/life values; then, we will address its relationship to other values found in organizational sciences (moral, organizational, and occupational), in addition to work ethics.

Work Values vs. Life Values

Values have been studied in many environments and contexts, including the workplace; this has led to the focus on work values in the context of applied psychology. However, this does not negate the fact that the construct of values has been extensively studied in its most abstract form without specifying a domain. These studies have used different terms, including general values (Lyons et al., 2006), individual values (Schwartz et al., 2012), personal values (Sagiv et al., 2017), life values (Elizur & Sagie, 1999), and personal life values (R. E. Hyde & Weathington, 2006). Values "help give meaning to life and provide the standards that individuals use to evaluate and define actions and events throughout the multiple domains of their lives" (Perrewé & Hochwarter, 2001, p. 30). This general description of values refers to the basic human values that are universally held and applied across life domains and are considered the most abstract values an

individual may hold. Therefore, this most basic form of values may pertain to life as a whole, and for the purpose of this study, we refer to it as life values.

Some researchers have conceptualized work values as contextualized expressions of life values (J.-I. C. Hansen & Wiernik, 2017). One of the notable attempts at examining the relationship between work values and life values is Elizur and Sagie's (1999) study. They used 24 items to assess work values and a parallel set of 21 life value items in a sample of 165 employees in diverse organizations. They noted that their life values were mostly nonwork values found in home life and family contexts. Using the Smallest Space Analysis approach (SSA; Lyons et al., 2010), their three-dimensional graphical representation of the spatial mapping of the results of this assessment empirically confirmed that life and work values are distinctively organized into two regions, forming a cone structure. A broad base area comprised the items of life values at the bottom and a narrower area comprised work values at the top. The larger area found for life values supported their conceptualization that the meaning of life values is broader than work values.

An interesting finding of Elizur and Sagie's (1999) study is that common values between the life and work spheres did not hold the same ranking or importance level within each region. For instance, interest and responsibility were rated as the most important values at work, but they ranked eighth and ninth in the

general life area. Also, the value of physical and economic security obtained the fourth rank in the life values hierarchy but obtained a lower rank (thirteenth) in the form of its work counterpart (job security). This finding demonstrates that despite the similarity between dimensions of work values and life values, their expression and importance for individuals differ according to the context examined and the environment in which they are considered (Elizur & Sagie, 1999).

Hyde and Weathington (2006) offer another intriguing examination of the relationship between life and work values. They proposed four primary areas of life values based on previous research. In their conceptualization, life values "comprise smaller, individual subdomains, or different life spheres, that make up one's life and that help break up values into manageable and relative parts. These spheres represent the different areas of life that an individual has a role in and places value upon, such as family life, work life, religion, or self" (R. E. Hyde & Weathington, 2006, p. 156). The value of family emphasizes family and puts higher importance on things done for family members. The value of work emphasizes work where individuals feel accomplished because of it and find worth in it. The value of religion emphasizes the belief in something bigger than self and allowing religion to lead life. Finally, the value of self emphasizes internal and external desires of one's self, including one's cognitive value, appearance, health, and interest in material gains and objects.

According to Hyde and Weathington (2006), each individual puts different importance on the role of these value areas in their life, such that a hierarchy of each of these areas is constructed within each individual, and the area of highest priority can differ among individuals. For instance, some individuals may value the work domain above others, and others may put family first in their value system relative to other areas of values. This proposition suggests that individual differences in which life domains are most important to the individuals can result in within-person consequences regarding which values rule over others in cases of conflict arising between these life spheres and their attached values. They noted that this comprehensive view of studying work and nonwork values brings valuable insights as it does not treat the work sphere as a closed system with no outside pressures. Instead, they acknowledge that in reality there are always pressures from outside the work spheres (i.e., from other areas of life) that spill into the work sphere. For instance, the subject of work-family conflict has long been studied, where the work and family domains often interfere with one another (Perrewé & Hochwarter, 2001). Family needs can interfere with the attainment of work values and vice versa; that is why it would be essential to understand how these different domains of life interact with each other (R. E. Hyde & Weathington, 2006).

Hyde and Weathington (2006) aimed to investigate the relationships between life values (operationalized by their four domains conceptualization) and

work attitudes. Their results based on surveying 153 working individuals indicated that overall averages of the importance given to the four areas of live values were ranked in the following descending order: family, religion, work, and self. Also, they observed interesting relationships with work-related variables. For instance, they found that higher importance of family values corresponded to higher scores of positive affect at work, which they discuss as a possible reflection of individuals becoming more enthusiastic and energized at work when they see that work provides them with time and money for their families. Similarly, they found that high family values were related to high normative commitment scores, suggesting that people who put a higher value on family can feel obligated to show up to work to provide for their families and keep up with their responsibilities. Furthermore, they found that conscientiousness was related to those who value family and religion together, suggesting that being driven by family responsibility or religious ethics and standards would make people more conscientious (i.e., hardworking and responsible) in the workplace.

The literature has provided two possible explanations for how work and nonwork values can be related. Elizur and Sagie (1999) discussed spillover (positive/direct) and compensatory (negative/inverse) relationships. Spillover (direct relationship) happens when there is a similarity between values deemed important in the work and life domains. For instance, individuals may value safety

and economic security in the life domain and place equal importance on job security in the work domain. Compensatory (inverse relationship) happens when a value has high importance in one domain (e.g., work) and low importance in the other (e.g., life). If a value is already fulfilled at work, it could be that it does not need to be prioritized in nonwork areas and accordingly it is deemed less important in its consideration for the other domains.

The authors argued that the positive correlations found in their study between life values and work values extend support to the spillover relationship case; however, they recommended further research in this area (Elizur & Sagie, 1999). Indeed, further research into that relationship could be needed as Pearson correlations alone might not tell the whole story, and probably other analytical analyses (e.g., Spearman's correlation) involving treating values' ranks as ordinal data (rather than interval/ratio) could be more helpful. Values are generally viewed positively with variations in their ranking importance, so a rank-ordered view that looks at their ordinal changes may be more suitable for examining their relationships with each other.

In line with these propositions about the nature of the relationship between work and life values, Rounds and Leuty (2020) presented additional questions that further research can target. For example, do work values arise from life values driven by an individual's interactions with the workplace? Do work values affect

life values? Can fulfilling a value in a specific life domain compensate for not

attaining it in other life situations? The answers to these questions can be beneficial

for career counseling as clients may be able to choose from various

roles/environments to "achieve a sense of value fulfillment in their lives" (Rounds

& Leuty, 2020, p. 534). Additional research is needed to answer these questions

and improve our understanding of the relationship between life and work values.

Work Values vs. Cultural Values

Although previous cross-cultural studies have examined different aspects of

culture (e.g., values, practices, norms), there has been a focus on cultural values in

the cross-cultural industrial/organizational psychology and organizational behavior

literature (Gelfand et al., 2017). A search for "cultural values" and "work values" in

the APA PsycInfo database returned 6,940 and 1,781 results, respectively. This

result suggests that cultural values have received substantially more research

attention than work values.

Cultural values are "shared, abstract ideas about what a social collective

considers as good and desirable" (Sagiv et al., 2017, p. 631; Williams, 1970). The

basic concept behind cross-cultural values research is that societies face the same

issues globally, but how they address these problems depends on cultural value

dimensions (Sagiv et al., 2017). Although various taxonomies of cultural values are

common in the literature (e.g., Chhokar et al., 2008; Hofstede, 2011; Schwartz et

50

al., 2012), the history of cultural values has been dominated by the study of Hofstede's cultural values (Hofstede, 2011).

Hofstede defined culture as "the collective programming of the mind that distinguishes the members of one group or category of people from others" (Hofstede, 2011, p. 3). He discussed that the term culture was most commonly used in reference to tribes or ethnic groups, nations, organizations, and to a lesser extent, occupations. However, large-scale empirical studies have extensively focused on applying the term to nations (Sagiv et al., 2017). Hofstede (2011) discussed the importance of operationalizing culture at the right level of analysis by using an aggregation of data suitable for the study of interest. He noted that "changing the level of aggregation studied changes the nature of the concept of 'culture'" (Hofstede, 2011, p. 3). In his book, *Culture's Consequences: International Differences in Work-Related Values* (Hofstede, 1980), he laid the foundation for his cultural values dimensions when he analyzed a large survey dataset involving values for more than 100,000 questionnaires taken by employees of the global IBM corporation in over 50 countries around the world. He aggregated the data at a national level using individual-level data and initiated the dimensions of his cultural values.

The updated taxonomy of his cultural values includes the dimensions of power distance, uncertainty avoidance, individualism versus collectivism,

51

masculinity versus femininity, long-term versus short-term orientation, and indulgence versus restraint (Hofstede, 2011). These dimensions usually describe the national level similarities and differences between nations/countries. This description target is one of the main differences between cultural values and work values. In terms of the level of analysis, work values focus on the individual level compared to the national level adopted by cross-cultural studies. Another difference is the focus of the values. While cultural values focus on how the society prefers to address societal issues collectively and how to reach an optimal level of functioning, work values focus on what individuals deem important to be attained among work outcomes. In this way, cultural values should describe nation-level differences (in the case of nations) regarding the optimal way of dealing with societal issues. In contrast, work values describe individual-level differences concerning the importance ascribed to different work outcomes. Furthermore, given that individuals get exposed to cultural values early on in their development, this environmental factor can be expected to play a role in shaping individuals' beliefs and worldviews (Gahan & Abeysekera, 2009), which could, in turn, contribute to the development of more specific and contextualized beliefs and values (Stern et al., 1995), such as work values.

A direct examination of the relationship between cultural and work values has supported the proposition that cultural values predict work values (Jaw et al.,

2007; White, 2006). White (2006) demonstrated that different cultural patterns were related to valuing different work outcomes. For instance, individuals with horizontal individualism put a higher importance on the values of autonomy, a variety of challenging tasks, and pleasant working conditions. Individuals high on vertical individualism valued achievement and stimulation components more. In addition, Jaw et al. (2007) found that masculinity predicted power and status, and stability and rewards, individualism predicted stability and reward, power distance predicted power and status, and Confucian dynamism predicted all the previous work values in addition to self-enhancement.

Furthermore, Gahan and Abeysekera (2009) presented a model that hypothesizes that culture is a crucial determinant of work values where national cultures' effect on work values is mediated by self-construal (i.e., the way individuals see themselves in relation to others and the environment). They discuss that immediate family, norms (societal and cultural), values, and beliefs shape individuals' work values and act as priming mechanisms to sustain individuals' values in the presence of individual processes that shape individuals' relations to the environment (i.e., self-construal). Their results partially supported their model by finding a strong mediation effect of individual self-construal on the relationship between national culture and intrinsic work values, but not extrinsic work values.

Finally, it can be noted that cultural values have been linked to work values since the beginning of work on cultural values. The seminal book by Hofstede (1980) was based on studying the organizational world and aimed at examining "work-related values," leading to the most common cultural values dimensions used in many fields inside and outside the organizational domain. Moreover, one remarkable project that used cultural values in the organizational literature was the GLOBE project, where the researchers provided an in-depth analysis of culture and leadership in 25 countries (Chhokar et al., 2008). Future research needs to look further at the intersection of culture and work and the relationship between cultural and work values.

Work Values vs. Moral Values

Management researchers have used the term "values" to refer to ethical business practices and attitudes (J.-I. C. Hansen & Wiernik, 2017). However, some values have a moral aspect by nature, and those are referred to as moral values, which can be defined as "values that distinguish between good and evil or provide standards or beliefs about what is good or evil" (Schleicher et al., 2011, p. 177). Scott (2000) proposed four types of moral values: (a) honest communication, which includes things vital to one's ability to trust the words of another; (b) respect for property, which includes caring for property and refraining from taking another's property; (c) respect for life, which includes aiding others and refraining from

destroying life; and (d) respect for religion, which includes observing rituals and refraining from disobeying religious rules.

Based on that, moral values seem to be a subset of life values that can be observed in action across domains, including at work. Nevertheless, they also appear to differ from work values regarding their orientation. Whereas work values appear to be prescription-oriented (i.e., pertaining to approaching a set of desirable outcomes), moral values are distinguished by additionally involving a proscription-orientation (i.e., pertaining to avoiding a set of undesirable outcomes). Nonetheless, work and moral values can be related to ethical decision-making at work (Glover et al., 1997; Singhapakdi & Vitell, 1993). For example, Singhapakdi and Vitell (1993) investigated the relative impact of personal and work/professional values on the ethical decisions of 492 marketers. They found that work/professional values had a stronger influence on ethical judgment in marketing decisions than personal values.

Finally, in exploring the relationship between work values and moral values, Berings and Adriaenssens (2012) have investigated how business ethics (moral values) and work values are related to vocational interests. Their results showed that business ethics were positively related to the work values of structure, rationality, and team, but they were negatively related to the earnings work value. Also, in a hierarchical multiple regression analysis, they found that the work values of structure, rationality, and earnings were significant predictors of business ethics

scores. In the end, although the intersection between work values and ethics can be a matter of philosophical debates, especially when considering the role that business and work play in societies, further research on the relationship between work values and moral values and their relative importance in the workplace can be helpful.

Work Values vs. Work Ethics

Some of the early value studies in the literature (e.g., Sexton & Chang, 1976) have viewed work ethics as representation of work values. Studies on work ethics have been mostly driven by religious perspectives regarding the ideal practices, behaviors, and ethics upheld by religious workers. For instance, Islamic work ethics (IWE) were defined as "positive virtues and collections of values in the obligations as stipulated by the religion" (Ab. Wahab & Masron, 2020, p. 183). The literature includes studies of different work ethics, including Protestant (Furnham, 1982, 1990; Mirels & Garrett, 1971), Islamic (Abdullah et al., 2013; Ali & Al-Owaihan, 2008; Wahab & Ismail, 2019), Jewish (Schnall, 2001), Confucian (Coates, 1987), and Taoist (L. Lin et al., 2013) work ethics.

The Protestant Work Ethic (PWE) is likely the most studied work ethics construct in organizational literature. This may have been driven by early discussions of the relationship between Protestant work ethics and economic growth (i.e., capitalism; Weber, 1930). The principal dimensions of PWE as

described by Weber are individualism, asceticism, and industriousness (Wollack et al., 1971). At the core of PWE, work should be valued for its intrinsic rewards as it represents the best use of one's time, and not just because it enables the attainment of extrinsic rewards. An individual that is high in PWE is expected to prefer working to being idle, and to derive satisfaction from doing the job well (Wollack et al., 1971).Previous studies have compared work ethic types to each other and concluded that they share similar directions for individuals. For instance, Kalemci et al. (2019) compared PWE with IWE and found that PWE are universally shared regardless of religious orientation. In addition, Sagie et al. (1996) shared a similar note about the similarity of ethics derived from religious traditions, as they are mostly related to diligence, achievement, and economic success.

Work ethics and work values appear to overlap in terms of acting as guiding principles for individuals at work. However, they mostly differ in their scope. Work ethics can be seen as process-oriented guiding principles that individuals refer to as standards of how to do things (similar to working style). On the other hand, work values can be seen as outcome-oriented guiding principles that individuals refer to as standards of desirable work outcomes and rewards. Although the literature includes many examples of work values operationalized in the form of work ethics (e.g., L. Lin et al., 2013), one notable exception is the Survey of Work Values (Wollack et al., 1971). The focus of this survey is on measuring secularized

Protestant ethics which was operationalized in a manner closer to work values than work ethics. For instance, this survey involves three intrinsic aspects of work (pride in work, job involvement, activity preference), two extrinsic aspects of work (attitude towards earnings, social status of job), and two mixed aspects of work (upward striving, responsibility to work).

Work Values vs. Organizational Values

Organizational values have received much attention in management sciences, driven by the introduction of the concept of organizational culture (Agle & Caldwell, 1999). Organizational culture is defined as "the collection of central values hidden in the shared myths and symbols of that domain" (Broms & Gahmberg, 1983, p. 482). Researchers have treated organizational values as a representation of organizational culture. For example, Schein (1985) has proposed that organizational culture comprises three components; artifacts, which are the prominent representations of the organization that an outsider can see; values, which are the declared set of values and norms by the company; and shared basic assumptions, which are the beliefs and behaviors deeply embedded in the organization that sometimes can go unnoticed (Burkus, 2014). That conceptualization of organizational values as part of the organizational culture has made it a foundational component of studying organizational environments.

However, organizational values in themselves have been the focus of a plethora of research studies. Researchers have defined organizational values as "the beliefs held by an individual or group regarding means and ends organizations "ought to" or "should" identify in the running of the enterprise, in choosing what business actions or objectives are preferable to alternate actions, or in establishing organizational objectives" (Enz, 1988, p. 287). In other words, they refer to "the set of values that are typically shared within an organization (and aggregated to the level of the organization)" (Schleicher et al., 2011, p. 175).

Bourne and Jenkins (2013) have proposed a dynamic perspective on organizational values involving four forms of values: espoused, attributed, shared, and aspirational. First, espoused values are "the values that top managers sanction through verbal or written statements, and formal documents are often presumed to represent organizational values" (Bourne & Jenkins, 2013, p. 498). These values are reflected in organizational statements and documents, an organization's website and online communication, and what the organization explicitly declares to be its "core values." These surface-level elements are visible to job candidates and can be used by candidates to evaluate if organizational values seem to align with their own (Tecle, 2020).

Espoused values are also in line with previous conceptualizations of culture and its components of organizational artifacts or symbols that reflect the underlying

assumptions of the organization (Schein, 1985). Indeed, an essential task of organizational leadership is "to create a social structure that embodies select values" (Enz, 1988, p. 286; Selznick, 1957). However, some researchers have suggested that espoused values can be used to enhance the corporate image (e.g., socially relevant values and corporate social responsibility) regardless of whether they are promoted internally among the organization's employees or actually applied as part of organizational practices (Khandelwal & Mohendra, 2010). Furthermore, a relevant concept that has been discussed in the literature is Employee Value Proposition (EVP) which is defined as "the value or benefit employees derive or perceive to gain or experience through being part of an organization" (Arasanmi & Krishna, 2019, p. 388; Heger, 2007). EVP refers to what the employee expects to receive (outcomes) based on being part of the organization (Arasanmi & Krishna, 2019), and therefore, it is affected by what the organization declares about its values, compensation, and benefits. Arasanmi and Krishna (2019) discussed how EVP relates to critical organizational outcomes, including employees' intention to stay with the organization.

Second, attributed/enacted values are defined as "those that members generally regard as representative of the organization" (Bourne & Jenkins, 2013, p. 499). These attributed values are those underlying the values component of Schein's (1985) organizational culture dimensions. Enacted values are felt by the

employees in their day-to-day work at the organization and reflected in organizational policies and procedures (Tecle, 2020).

Third, shared organizational values are described as "an aggregation of the values of its members" (Bourne & Jenkins, 2013, p. 500). This is similar to the shared assumptions described in definitions of organizational culture. When employees share values, this shapes their sensemaking, which they depend on to interpret and make sense of organizational changes and events (Tecle, 2020; Weick et al., 2005).

Fourth, aspirational values are defined as the values "which members believe ought to be the values of the organization" (Bourne & Jenkins, 2013, p. 501). They reflect the values employees believe their organizations should adopt to thrive long-term (Bourne & Jenkins, 2013).

In terms of assessing organizational values, different measures have been developed and adopted in the literature (e.g., Enz, 1988; O'Reilly et al., 1991). For example, the Organizational Culture Profile (OCP; O'Reilly et al., 1991) has been used to research both organizational values and work values. O'Reilly et al. (1991) developed 54 items to assess the values of employees and organizations with the goal of measuring person-organization fit. The measure used a Q-sort approach of sorting items into nine pre-defined groups. They focus on the central values that

can be considered essential to both individual's self-concept and the organization's central value system. Participants take the items twice to assess their standing on these work values and how the same set of values relate to their organization separately. The OCP items demonstrated their usefulness in assessing how specific work values describe both the organization and the individual in parallel (O'Reilly et al., 1991). Their factor analysis of firm descriptions yielded seven organizational culture values of Innovation, Stability, Respect for People, Outcome Orientation, Attention to Detail, Team Orientation, and Aggressiveness.

However, other researchers have adopted more organization-specific or business-descriptive values to represent organizational values. For example, in Enz's (1988) study, the researcher examined the values of a restaurant chain (e.g., efficiency, employee development) and those particular to a robotics company (e.g., company growth, industry leadership, survival).

With regard to the outcomes of organizational values, researchers have related these to several organizational outcomes, including organizational performance, decision making, and occupational health (Tecle, 2020). For instance, Peters and Waterman (1982) suggested that most successful organizations value the following: being the best, innovation, the importance of people as individuals, the importance of the details of execution, superior quality and service, the importance of informality to enhance communication, the importance of a profit orientation,

and goal accomplishment (Tecle, 2020). Also, organizations with more articulated value systems provided managers with less ambiguity in decision-making and decreased the probability of conflict (Liedtka, 1991). In addition, organizations with strong workplace safety values were less likely to have their employees experience work-related head injuries (Kontos et al., 2017).

Based on the previous conceptualization of organizational values, they go hand in hand with work values, especially in operationalizing person-organization fit as the congruency between them. As for the content domains, depending on how organizational values are operationalized (e.g., in terms of focusing on business objectives or focusing on the work environment and conditions), they may target similar or dissimilar dimensions compared to work values. An additional difference between organizational and work values is the source of their ratings. In contrast to rating work values by individuals/employees, organizational values may be operationalized as the aggregate of employees' values or inferred/evaluated by subject matter experts (e.g., Tecle, 2020). The similarities between organizational values and work values have been supported by previous studies where the correlations between them were significant, and work values acted as predictors of organizational values preference (e.g., Sousa & Porto, 2016).

Work Values vs. Occupational Values

Last but not least in our focus on construct specification is discussing

occupational values. Although it could be self-explanatory that the term pertains to

the values offered through occupational membership (i.e., how different

occupations provide different rewards), the term occupational values has been used

in two different ways in the literature. First, it has been used as another

representation of traditional work values using the term "occupational reward

value." This involves how vital various values are in an individual's decision about

career choice (Mortimer & Lorence, 1979). Second, it has been used in reference to

Occupational Value Profiles (OVP; Rounds et al., 2008, 2012), which are described

as "a value-based classification of work environments" (Rounds et al., 2012, p. 1).

This use emphasizes operationalizing occupational values in terms of the type of

rewards or values offered by an occupation regardless of the perspective or

preferences of this occupation's incumbents.

Occupational Value Profiles (OVPs) were specifically developed based on

the Theory of Work Adjustment (Dawis & Lofquist, 1984) to become part of the

U.S. Department of Labor's Occupational Information Network's (O*NET) content

model (Rounds et al., 2012). OVPs provide a much-needed link between value-

based assessments and O*NET's occupations that can be especially useful for

matching individuals with fitting careers. Early efforts describing the work-values

of occupations were discussed by McCloy, Waugh, Medsker, et al. (1999a) using an earlier version of the term OVPs, namely "Occupational Reinforcer Patterns" (ORPs). As the earlier version of OVPs, ORPs were profiles of scores on need statements characterizing the nature of work (e.g., creativity, authority) and conditions of the work environment (e.g., achievement potential, compensation; McCloy, Waugh, Medsker, et al., 1999a). Actual ratings of presence or absence of need reinforcers (i.e., work rewards/values) were given for 1,122 occupations by using rating scales based on the need statements of the Minnesota Importance Questionnaire (MIQ; (Rounds et al., 1981). Subject matter experts (SMEs) provided ratings of high, medium, or low on the need reinforcer based on the capacity of each occupation to reinforce a given need (McCloy, Waugh, Medsker, et al., 1999a). They noted that the SMEs' ratings were compared to similar efforts done earlier by Stewart et al. (1986), and they were correlated at .50 or higher, indicating good consistency between incumbent and non-incumbent raters, supporting the use of non-incumbent raters for this type of task.

The second generation of work value profiles OVPs by Rounds et al. (2008, 2012) introduced revised work value definitions and rating scales. Occupational analyst (SME) raters were also used in this project, and they responded to the question of "to what extent does this occupation satisfy this work value?" based on the occupation and the work values assigned (Rounds et al., 2012). Based on these

efforts, individuals can now take the self-report assessment of work values, the Work Importance Locator (McCloy, Waugh, Medsker, et al., 1999b), and explore their work values correspondence with O*NET's database of different occupations' OVPs.

2.1.6 Operationalization (Work Values vs. Work Values Congruence)

The work values literature includes two main operationalizations: direct assessment of work values dimensions or assessment of work values congruency with an organizational target (e.g., organization, team, occupation/job). The first operationalization of work values variables is driven by an interest in examining the direct relationship between one or more work values and other organizational variables. This operationalization is based on the proposition that work values (e.g., fairness, honesty, achievement) could directly affect workplace behaviors irrespective of their congruence with organizational entities (Adkins & Russell, 1997). The second operationalization in the form of congruency is driven by theories of person-environment fit (Van Vianen, 2018). This view is based on the proposition that work values' interaction with the environment is more predictive of organizational outcomes than work values' direct effects and that outcomes are best when work values are compatible with the environment (Tecle, 2020). As noted before, most work values studies focus not on employees' values but rather

on their work values' congruence (Schleicher et al., 2011). In the next section, we will focus more on exploring work values congruence.

Work values congruency, also known as values correspondence, is defined as "the compatibility of work values between the focal person and other organizational entities such as supervisors, interviewers, coworkers, work group, and the entire organization" (Bao et al., 2012, p. 5). This view explains that the focus is on the correspondence to workplace elements, including but not limited to the organization (person-organization fit). Other targets of value congruency relate to the various categories of person-environment fit, such as person-team fit, person-supervisor fit, person-occupation fit, and person-job fit.

Value Congruency with the Organization

Aligning an individual's value system with that of an organization should result in more satisfaction in work and other domains of life (R. E. Hyde & Weathington, 2006). Although person-organization fit involves the examination of multiple congruent attributes between the person and the organization (e.g., personality; King et al., 2016), value congruency with the organization is the most frequently assessed dimension of person-organization fit (Hoffman & Woehr, 2006). That focus on operationalizing person-organization fit in terms of value congruency has encouraged researchers to examine the effects of value congruency

in meta-analytic studies (Arthur et al., 2006; Hoffman & Woehr, 2006; Verquer et al., 2003).

Tecle (2020) has discussed different stages of seeing person-organization value congruency in action. Organizational espoused values can attract candidates to apply to the organization. This attraction is influenced by organizations' websites and public relations efforts. In reviewing these artifacts of espoused values, candidates evaluate whether their work values fit with them. As they go through the selection process, candidates may continue to review their fit with organizational values, which can guide their decision on joining the organization. When candidates join the organization, they observe the organizational enacted values as the values in fact applied internally and demonstrated through organizational actions and policies. If the enacted values align with the espoused values, candidates affirm their value congruency with the organization; otherwise, a misfit can be perceived, leading to employee dissatisfaction.

Value Congruency with the Supervisor

An individual's work values can also align with those of their supervisor. This value congruency can enhance performance by facilitating coordination and communication through "shared elements of cognitive processing" (Adkins & Russell, 1997, p. 206). The congruency with supervisors can be particularly important because an employee's supervisor is considered the employee's primary

point of contact with the organization (Adkins & Russell, 1997). Previous studies have examined the relationship between employee-supervisor value congruency and performance (Adkins & Russell, 1997; Meglino et al., 1989). In Meglino et al.'s (1989) study, worker-supervisor value congruency was associated with more employee satisfaction and commitment. However, in Adkins and Russell's (1997) study, the relationship between subordinate-superior work values congruency and subordinate performance was not supported. Future studies are needed to clarify the inconsistency of these previous findings.

Value Congruency with the Group

Individuals' work values can also be congruent with their team members. Adkins et al. (1996) have explored the relationship between co-workers' work values congruency and work outcomes. They discuss that this value congruency is valuable for multiple reasons. First, individuals who share values with others are better able to predict their behavior, thereby reducing the ambiguity and tension of working together, which can be expected to increase employee satisfaction and performance. Second, sharing a value system with co-workers can be associated with having a common communication system, which can decrease communication noise and reduce stimulus overload, facilitating their interactions. Adkins et al.'s results indicated that co-workers value congruence was related to performance,

moderated by the extent to which the job requires individuals to work closely together on tasks.

Value Congruency with the Job

Finally, another form of work values congruency involves the match between individuals' work values and what their occupations or jobs offer to satisfy these values and underlying needs. As discussed earlier, matching a person's work values system with that of an occupation (e.g., occupational values profile) is a desirable goal for helping individuals find a satisfying career. Similarly, matching a person's work values with what a specific job offers should influence employee satisfaction at work. Value congruency with jobs has been studied in the context of person-job fit, and more specifically, the needs-supplies fit of individuals with their jobs (Kristof-Brown et al., 2005). Godrich (2010) has shared similar propositions about expanding the focus of work values congruency to go beyond the person-organization fit domain and make it more contextualized, including making it based on congruency with vocations. This type of value congruency has been found to be helpful in predicting work-related outcomes. For example, Judge and Bretz (1992) have demonstrated that individuals were more likely to choose jobs whose value content corresponds to their work value system using a policy-capturing research design, thereby empirically supporting that work values congruency with jobs significantly influenced job choice decisions.

70

2.1.7 Taxonomy

Our work values are hypothesized to be organized into a hierarchy of values forming our value system, ordered according to the priority level (i.e., relative importance) that we ascribe to them (Rokeach, 1979; Schleicher et al., 2011). Measuring these value systems requires a solid foundation for the work value content domain in the first place. There has not yet been a clear consensus regarding the structure of work values in the literature.

Various researchers have created work values taxonomies along with measures to assess them. These conceptualizations involving classifying the content domain of work values have varied from simple classifications to more complex ones. For instance, according to Rokeach (1973), values can be categorized as either instrumental or terminal. Instrumental values represent preferred modes of conduct or ways of behaving (e.g., honesty, obedience), while terminal values represent preferred end states (e.g., wealth, happiness, well-being, achievement). More complex taxonomies include four, five, six, or more categories or factors of work values (e.g., Theory of Work Adjustment; Dawis & Lofquist, 1984). The following discussion will cover a few of the most notable taxonomies in the work values literature.

Theory of Work Adjustment

The research project related to the Theory of Work Adjustment (TWA; Dawis & Lofquist, 1984) had a primary influence on the study of work values. In addition to being one of the main theories covering work values (as will be discussed later), this approach involves a six-value structure adopted in multiple measures. These measures included the Minnesota Importance Questionnaire (MIQ; Rounds et al., 1981), Work Importance Profiler (McCloy, Waugh, & Medsker, 1999), and Work Importance Locator (McCloy, Waugh, Medsker, et al., 1999b). In addition, an adaptation of the same taxonomy has been used in the content model of O*NET (Rounds et al., 2012). An important implication of this adaptation is that it means there is substantially more information available on occupations' work values profiles (OVPs in O*NET) for this taxonomy than for any of the other work values taxonomies we will discuss.

Researchers focusing on TWA have identified 21 work values, and factor analysis of them across multiple samples has resulted in a six-value structure, which includes the following work values factors: Achievement, Altruism, Autonomy, Comfort, Safety, and Status (Dawis & Lofquist, 1984). Although the terminology used by TWA referred to these 21 work values as "needs" or "occupational reinforcers," we will refer to these work values facets as work values for two reasons. First, this helps standardize the terms used across multiple

72

taxonomies and measures (others refer to these facets as work values). Second, our previous discussion on the relationship between needs and values has shown the close relationship between them, as values aim to fulfill needs and the hierarchy notion suggests that they underlie the needs they fulfill. Accordingly, referring to these needs as work values is appropriate and is in line with the operationalization found in the rest of the work values literature.

For ease of reference, the most updated version of this taxonomy as used by the O*NET Content Model, along with definitions and the items from the Work Importance Locator, are presented in Table 1. In this updated version, some changes from the initial version proposed in TWA have been made (McCloy, Waugh, Medsker, et al., 1999b). The changes included renaming Comfort to Working Conditions, Status to Recognition, Altruism to Relationships, Safety to Support, and Autonomy to Independence. We will use these updated factor names from now on.

Table 1

Work Values Taxonomy in the O*NET Content Model With the Items From the Work Importance Locator. Adapted from McCloy, Waugh, Medsker, et al. (1999b).

Work Values Factor	Work Values Facets	Items – *On my ideal job, it is important that…*
Achievement Occupations that satisfy this work value are results oriented and allow employees to use their strongest abilities, giving them a feeling of accomplishment.	**Ability Utilization** Workers on this job make use of their individual abilities.	...I make use of my abilities.
	Achievement Workers on this job get a feeling of accomplishment.	…the work could give me a feeling of accomplishment.

Working Conditions Occupations that satisfy this work value offer job security and good working conditions.	**Activity** Workers on this job are busy all the time.	… I could be busy all the time.
	Independence Workers on this job do their work alone.	…I could work alone.
	Variety Workers on this job have something different to do every day.	…I could do something different every day.
	Compensation Workers on this job are paid well in comparison with other workers.	…my pay would compare well with that of other workers.
	Security Workers on this job have steady employment.	…the job would provide for steady employment.

	Working Conditions	…the job would have good
	Workers on this job have good working conditions.	working conditions.
Recognition	**Advancement**	…the job provide an opportunity
Occupations that satisfy	Workers on this job have opportunities for advancement.	for advancement.
this work value offer	**Recognition**	…I could receive recognition for
advancement, potential for	Workers on this job receive recognition for the work they do.	the work I do.
leadership, and are often	**Authority**	…I could give directions and
considered prestigious.	Workers on this job give directions and instructions to others.	instructions to others.
	Social Status	…I would be looked up to by
	Workers on this job are looked up to by others in their company and their community.	others in my company and my community.

Relationships	Co-workers	… my co-workers would be
Occupations that satisfy this work value allow employees to provide service to others and work with co-workers in a friendly non-competitive environment.	Workers on this job have co-workers who are easy to get along with.	easy to get along with.
	Social Service Workers on this job have work where they do things for other people.	…I could do things for other people.
	Moral Values Workers on this job are never pressured to do things that go against their sense of right and wrong.	…I would never be pressured to do things that go against my sense of right and wrong.
Support	**Company Policies and Practices** Workers on this job are treated fairly by the company.	…I would be treated fairly by the company.

Occupations that satisfy this work value offer supportive management that stands behind employees.	**Supervision, Human Relations** Workers on this job have supervisors who back up their workers with management.	…I have supervisors who would back up their workers with management.
	Supervision, Technical Workers on this job have supervisors who train their workers well.	…I would have supervisors who train workers well.
Independence Occupations that satisfy this work value allow employees to work on their own and make decisions.	**Creativity** Workers on this job try out their own ideas.	…I could try out my own ideas.
	Responsibility Workers on this job make decisions on their own.	…I could make decisions on my own.
	Autonomy Workers on this job plan their work with little supervision.	…I could plan my work with little supervision.

According to Rounds and Leuty (2020), Dawis and Lofquist (1984) have also conceptualized classifying these six factors into three bipolar dimensions (achievement versus working conditions, relationships versus recognition, support versus independence), and they were also crossed with three types of rewards: self (achievement and independence), social (relationships and recognition), and environment (working conditions and support). In trying to visualize this proposed bipolar structure, Figure 6 below shows these opposing positions and proposed reward type groupings.

Figure 6

A Visual Representation of Dawis and Lofquist's (1984) Bipolar Structure
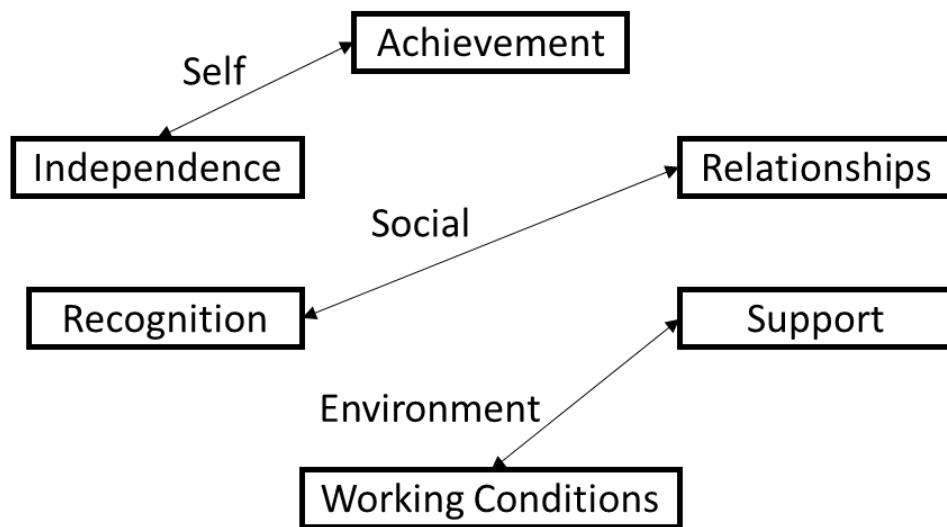
Note. Value factors opposing each other are dimensions of the proposed bipolar structure, and arrows represent three groupings based on the type of work rewards involved.

Work Importance Study

The global project of the Work Importance Study (WIS) has also significantly contributed to the study of work values (Super & Šverko, 1995). This study focused on identifying and exploring preferences for life and work outcomes at a global level. One of the measures developed for this study was the WIS Values

Scale (Super & Šverko, 1995). The taxonomy adopted by Super and his colleagues was based on 18 values, spanning both life and work domains, and organized into five orientations (factors). Table 2 shows the value orientations, facet values, and sample items used in Super and Šverko (1995).

Table 2

Work Values Taxonomy and Sample Items From the Work Importance Study.
Adapted from Super and Šverko (1995).

Orientation	Value	Sample Item
Utilitarian The importance of economic conditions and material career progress.	Economics	Have a high standard of living
	Advancement	Get ahead
	Prestige	Be admired for my knowledge and skills
	Authority*	Tell others what to do
	Achievement*	Have results which show that I have done well
Self-Actualization The importance of inner-oriented goals	Ability utilization	Use my skill and knowledge
	Personal development	Develop as a person
	Altruism*	Help people with problems

for personal development and self-realization.	Achievement*	Have results which show that I have done well
	Esthetics	Make life more beautiful
	Creativity*	Discover, develop, or design new things
Individualistic The importance of an autonomous way of living.	Lifestyle	Living according to my ideas
	Autonomy	Act on my own
	Creativity*	Discover, develop, or design new things
	Variety*	Have every day different in some way from the one before it
Social The importance of social interaction and social relations.	Social interaction	Do things with other people
	Social relations	Be with friends
	Variety*	Have every day different in some way from the one before it
	Altruism*	Help people with problems
Adventurous The importance of challenge and risk.	Risk	Do risky things
	Physical activity	Get a lot of exercise
	Authority*	Tell others what to do

Note. * refers to the values that had loadings on multiple orientations.

Studies of value congruence across samples have not supported the generalizability of the self-actualization, social, and adventurous orientations (Rounds & Leuty, 2020). Sverko has speculated that this may be because of intergroup differences, sampling errors, or differences in the value structure across secondary students, college students, and adults (Rounds & Leuty, 2020; Super & Šverko, 1995).

Theory of Basic Human Values

The Theory of Basic Human Values by Schwartz has been influential in the global study of values (for a comprehensive review, see Schwartz, 2012). He has proposed that ten fundamental human values are universal and reflect goals and motivations shared by all individuals to different extents. These ten values were organized into a circumplex structure that places values, based on the similarity of the motivation expressed by them, as adjacent or opposite to each other. This structure means that pursuing one value may lead to consequences that are congruent with or in conflict with other values. For instance, pursuing achievement typically conflicts with pursuing benevolence (Schwartz, 2012). These values are further grouped into four dimensions of higher-order values that similarly follow a bipolar structure (Self-Enhancement versus Self-Transcendence and Conservation versus Openness to Change).

83

Although the development and conceptualization of this value structure did not aim at making it work-oriented, a recent study has developed a measure of work values based on adapting the values and definitions of Schwartz to be work-related (Consiglio et al., 2017). The Work Values questionnaire (WVal) developed by Consiglio et al. (2017) provides a useful adaptation of the Theory of Basic Human Values to measure work values specifically. The values and adapted definitions for operationalizing them as work values and sample items from Consiglio et al. (2017) are presented in Table 3.

Table 3

Work Values and Sample Items Based on the Theory of Basic Human Values. Adapted from Consiglio et al. (2017).

Value Dimensions	Work Values with Definition	Sample Item - *It is important to me at work…*
Self-Enhancement*	**Achievement** Personal success at work as defined by recognition of one's abilities and products in the organization	…to be able to demonstrate my personal abilities.

	Power Social status and prestige in the work setting expressed through leadership roles and influence	…to be able to guide other people's actions.
Self-Transcendence	**Benevolence** Devoting oneself to the needs of people with whom one is in frequent work contact and creating harmonious and supportive work relationships	…to be able to take care of my colleagues.
	Universalism Fairness, respect, protection against discrimination for all members of the work organization; socially responsible policies	…that each person is treated fairly.
Conservation	**Security** Safety, stability, health, avoiding risks in the work and organizational setting	…that everyone in the organization has guaranteed job security.
	Tradition Respect, acceptance, and diffusion of organizational traditions, culture, and customs	…to follow the customs and values handed

		down in the organization.
	Conformity Complying and adapting to management expectations and norms, sacrificing personal inclinations to preserve organizational order	…to carry out my assigned roles, doing what my position requires.
Openness to Change*	**Self-Direction** Independent thought and decision-making, creating, and exploring at work; freedom to choose how to perform one's job	…to have the freedom to decide what to do.
	Stimulation Variety, novelty, and challenges in work situations and contexts	…to have a wide variety of different things to do.
	Hedonism* Pleasure in doing work, compatibility between work and one's recreational and leisure interests	…to be able to do work that I enjoy.

Note. *Hedonism is partially categorized into both Self-Enhancement and Openness to Change.

Furthermore, based on the values structure of the Theory of Basic Human Values, some researchers have called for adopting a structure similar to the four high-order dimensions of values —intrinsic, extrinsic, social, and prestige— and they presented support for that structure (Ros et al., 1999). Along the same lines, Jin and Rounds (2012) have corroborated using these four dimensions for categorizing work values as they used them for their meta-analysis on work values stability. They described the four factors as Intrinsic or self-actualization values, Extrinsic or security/material values, Social or relational values, and Status or power values.

Elizur's Structural Model

Elizur's (1984) exploration of the facet structure of work value items using the Small Space Analysis technique started a series of studies investigating the structure of work values. In the first study (Elizur, 1984), two facets were proposed to classify the work values domain: modality of outcome (instrumental, cognitive, affective) and the basis of system-performance contingency (rewards, resources). The first facet of modality referred to whether work values were instrumental (motivationally extrinsic and materialistic such as benefits and pay), cognitive (motivationally intrinsic and represents psychological outcomes of work such as achievement and responsibility), or affective (which is related to social outcomes of work such as co-workers and supervisory relations). The second classification facet

depends on whether outcomes are distributed system-wide (resources) or based on individual performance (rewards).

In 1999, Elizur and Sagie updated their model by maintaining the modality facet (material, affective, cognitive) but adding to that a facet of focus (focused, defused), and another of life area (life, work). The facet of focus is similar to Rokeach's (1973) conceptualization of instrumental and terminal values. *Focused* values pertain to kinds of behaviors or situations (e.g., money, recognition for one's good performance), while diffuse values pertain to end states and are not tied to specific situations (e.g., meaningful life or work, contribution to society). This dimension is similar to Elizur's (1984) conceptualization of system contingent outcomes (i.e., more diffuse) and performance-contingent outcomes (i.e., more focused). The last facet of life area adds context to the values of interest by specifying whether it is being evaluated about life or work. Based on that conceptualization, they found support for a cone-like graphical representation based on the relations between these items, where values reflecting the life area are situated at the cone's wide base, while those representing the work domain occupy a narrower area at the top of the cone.

Lyons et al. (2010) introduced the last development based on this model of values. They revised the model using an expanded set of 32 value items and the same Small Space Analysis technique. Their revision includes three facets: (a)

modality (instrumental, cognitive, social/altruistic, prestige-enhancing), (b) level of focus (society, job/organization, individual), and (c) growth orientation (growth-oriented, context-oriented).

In this updated model, they added prestige to the facet of modality as they discussed that it was missing from Elizur's conceptualization and that this addition was in line with the suggestions of Ros et al. (1999). Lyons et al.'s (2010) conceptualization of modality as Instrumental, Cognitive, Social, and Prestige make it comparable to Ros et al.'s (1999) four dimensions of Extrinsic, Intrinsic, Social, and Prestige, respectively. Lyons et al. (2010) also differentiated the focus level by replacing life with the two focuses of society and the individual. Finally, they replaced the focused versus diffused facet with growth orientation (growth-oriented versus context-oriented). They discussed that this is in line with the conceptualization of "growth needs" (Maslow, 1954) and "context satisfaction" of Hackman and Oldham's (1980) Job Characteristics Model. This growth orientation facet differentiates between work aspects that relate to personal growth and that an individual may still pursue even after achieving high levels of satisfaction (e.g., continuous learning, variety), and work aspects that are more short-term and pursued until they are no longer deficient (e.g., job security, authority). The three-dimensional graphical representation of these categories is proposed as a cylindrex (i.e., a complex structure of multiple levels and axes). Table 4 shows the revised structure's facets and the corresponding work values from Lyons et al. (2010).

Table 4

Revised Structure of Work Values of Lyons et al. (2010). Adapted from Lyons et al. (2010).

Modality	Level of Focus	Growth-Oriented	Context-Oriented
Instrumental	Societal		Fairness
	Job/organization	Supportive supervisor Information Training Feedback	Hours of work Competent supervision Balance
	Individualistic	Recognition	Benefits Salary Job security Independence
Cognitive	Societal		Creativity
	Job/organization	Use abilities Intellectual stimulating Interesting work Variety Continuously learn	Challenge
	Individualistic	Advancement	Freedom
Social/	Societal	Moral values	Contribution to society

Altruistic			Help people
	Job/organization		Co-workers
	Individualistic		Fun Social interaction
Prestige	Societal		
	Job/organization	Impact	Influence
	Individualistic		Prestigious Authority

Leuty and Hansen's Work Values Components (2011)

Another notable effort was made by Leuty and Hansen (2011), who analyzed common work values inventories in the literature and identified the factors contributing to them. Using the Principal Components Analysis technique, they utilized scores on the MIQ (Rounds et al., 1981), Super's Work Values Inventory (SWVI-R; Zytowski, 2006), and Manhardt's Work Values Inventory (Manhardt, 1972) in a sample of 374 undergraduate students from a Midwestern university in the US. Their study identified six work value components (factors) presented in Table 5.

Table 5

Work Values Components of Leuty and Hansen (2011). Adapted from Leuty and

Hansen (2011).

Value Component	Value Component Definition
Environment	The importance of the working environment, including scales related to physical conditions of the workplace, the quality of supervision, work-life balance, co-worker support, and job security.
Competence	The importance of challenging work and opportunities for competence, including scales pertaining to creativity, achievement, increased responsibilities and using one's skills.
Status	The importance of having status, prestige, high income, and advancement opportunities.
Autonomy	The importance of having independence, responsibility over work tasks, and variety.

Organizational Culture	The importance of doing work that is seen as moral, having fair company policies, support from management, proper training, and clear procedures.
Relationships	The importance of relationships with coworkers and helping others.

In the end, it can be noted that choosing among the discussed work value taxonomies or others may depend partly on the specific area of research (Rounds & Leuty, 2020). However, Rounds and Leuty (2020) discussed that the taxonomy based on the TWA (Dawis & Lofquist, 1984) seems to be the most appropriate for exploring work outcomes or career development issues and that it may offer the best available description of work values. Accordingly, we propose using it for conducting our meta-analysis. Nonetheless, more research into work values and the construct validity of multiple taxonomies will be needed to reach a consensus about the most comprehensive taxonomy to adapt in studying work values.

2.1.8 Measurement

Methods of Measurement

    A) Techniques

Many instruments have been developed for assessing work values. They differ in their measurement strategies/approaches and, as a result, in the information and type of interpretation offered (Nevill & Kruse, 1996; Zytowski, 1994). For instance, the hierarchical values system naturally lends itself to ranking strategies (Tecle, 2020). The priorities given to different values may mean that giving a specific numerical score for more than one value could be a less accurate representation of the value structure examined (Tecle, 2020). Moreover, researchers have recommended using ipsative approaches to help reduce the unwanted effects of social desirability (Ravlin & Meglino, 1989), leading to the adoption of multiple ranking strategies in developing value measures. In the following section, we will cover the different measurement strategies found in value assessments starting with non-ranking-based strategies, and then covering the rank-based strategies in more detail.

Self-reports. This refers to providing respondents with values along with their definitions and asking them to "identify" which values are most important to them. By just directly asking about the most important values, the information identified is not detailed (Nevill & Kruse, 1996).

Repertory Grid.   Based on Kelly's (1955) repertory grid technique, this approach involves a very detailed and complex process to obtain the best ideographic data about an individual's value system. This comes at the disadvantage of having to conduct time-consuming interviews. Also, this technique does not allow the results to be compared across individuals, given its personalized nature (Nevill & Kruse, 1996). Song and Gale (2008) used this technique to investigate 18 Chinese project managers' work values and provided an excellent example of how to conduct this assessment strategy.

Rating.   Like many traditional self-reported assessments, respondents in this approach are given statements of values to rate using a Likert-type scale ranging from unimportant to very important. Scores are summed up, and composite scores for value factors/dimensions can be computed. The first interpretation method is to compare the results to normative data from other individuals from the same population of interest to account for the generally high ratings on work values. However, it has been suggested that normative interpretations might not be recommended, given that individuals may rate all values as important (Rounds & Leuty, 2020). The second option for interpretation is to rank order the summated scores of the assessment. The rating strategy was argued to be one of the most useful strategies because of the rich information obtained, which can be used for both normative and rank-ordered interpretations (Nevill & Kruse, 1996).

Regular Ranking.　This approach involves providing respondents with the work value items and asking them to rank them in order of importance. However, providing a long list of values to rank order can be cumbersome and cognitively overwhelming for individuals to do accurately (see Rounds et al., 1978).

Paired Comparison Ranking.　In this approach, respondents are offered two value statements at a time and are asked to choose which one is important to them. Each value item would then be repeatedly shown to the respondents along with one of the remaining items until all possible combinations of all items are presented. As the number of stimuli (i.e., items) increases, the number of pairs needed to be added (k) will increase very rapidly, following the equation of $(n(n-1))/2$, where n is the number of items in the measure (Rounds et al., 1978). For example, for n=10, k=45, and for n=20, k=190 (this was in fact the case for one of the early versions of MIQ that included 190 paired comparisons). This design makes the assessment lengthy, time-consuming, and repetitive for the respondents.

Multiple Ranking. This is similar to paired comparison ranking with the difference that participants get more than two items to rank at a time. By increasing the number of stimuli (items) shown at one time, the length of the assessment decreases and becomes more practical and economical (Rounds et al., 1978). As Rounds et al. (1978) explained, the basis of this multiple rank order approach (also called incomplete block design) is to choose a fixed number of items shown at a

time (e.g., 5). Then, sets of items are designed to allow each item to be presented along with each other item in a specific number of subsets, thereby allowing all possible paired comparisons to be reproduced from the results of these multiple rank-ordered subsets. For example, when an item is included in a subset of five items, this subset can be seen as representing the paired comparisons of 10 pairs in one setting. And with carefully designed grouping, a 21-item measure can be sorted into 21 blocks of five items each. This arrangement can reproduce the results of having 210 paired comparisons, with the advantage of having a much shorter assessment, as was done with a later version of the MIQ (the version was called MRO5).

However, compared to paired comparison ranking, the multiple ranking order technique does not provide a good measure of the consistency (transitivity) of the rankings (Rounds et al., 1978). The consistency of multiple ranking can be obtained using the calculation of circular triads, but this offers less information than obtained in the case of paired comparisons (Rounds et al., 1978). Rounds et al. (1978) found that paired comparisons and multiple ranking are highly comparable strategies. However, there was strong support that respondents prefer multiple rankings more. The researchers also noted that an individual's education and abilities may play a role in choosing multiple ranking over other approaches.

Q Methodology. Also known as Q-sort or card sorting, Q methodology is another form of ranking that requires respondents to assign value items to sets of different levels of importance. For example, the self-administered version of the WIL (McCloy, Waugh, Medsker, et al., 1999b) asks respondents to categorize 20 cards of value statements into five piles (categories) with four cards to be put into each of these piles. These piles are labeled using a five-point scale, where the first pile is 5 (most important) and the last pile is 1 (least important). This technique requires participants to put all value statements in ranked groups according to their importance level. This Q-sort approach can be easy for respondents to self-administer and score their assessments according to the measure's manual. However, one downside of this type of measurement is that it results in an ipsative scale where items compete with each other because of this rank order, leading to low internal consistency reliability estimates and lower correlations with other variables (McCloy, Waugh, Medsker, et al., 1999b).

B) *Congruency Measurement*

When work values are operationalized as work values congruency, there can be additional considerations for measurement depending on the operationalization of congruency.

i) Indirect Assessment

In this type of congruency assessment, researchers assess individuals' work values and the corresponding work values of the congruency target (e.g., organization, supervisor). Assessments of both the individual and the congruency target can use the previously discussed measurement strategies. Then, a fit index can be calculated to represent the degree of similarity or fit between the work values profiles. The literature has included many fit indices, such as those calculated using difference scores, Euclidean distance, and polynomial regression (see Guan et al., 2021; Su et al., 2015). This indirect assessment of fit includes subjective and objective approaches depending on the source of information. The subjective approach is when the assessment is based on the focal person's perceptions. Conversely, the objective approach is when the evaluation comes from an external source (Bao et al., 2012).

Both the person and the environment can be assessed using subjective or objective approaches (Ostroff & Zhan, 2012). A subjective assessment of the person happens when the person provides their own interpretation and perceptions of their work values. A subjective assessment of the environment is when the person involved in this fit comparison provides their own interpretation of the environment. On the other hand, an objective assessment of the person happens when an outsider (e.g., supervisor, co-workers) or different sources provide

information about the individual being assessed. Moreover, an objective assessment of the environment (e.g., organization) can be done by others working at the organization, SMEs, and documents or reports about the environment. Traditionally, when individuals assessed themselves and the environment, this was referred to as *subjective* or *perceived* fit. Similarly, when the person and the environment were assessed by an external source, this type of fit was referred to as *objective* or *actual* fit (Ostroff & Zhan, 2012).

Some researchers consider objective fit to be the actual score of value congruence (Judge & Cable, 1997), while others put more importance on subjective fit in predicting behavior (Finegan, 2000). Different effects on outcomes across different types of fit can be due to the accuracy of individual perceptions. This accuracy can be influenced by the inaccessibility of information, the limited exposure to objective information, or the inability to form accurate evaluations of the environment (Ostroff & Zhan, 2012). In comparing subjective versus objective fit in terms of their effect on outcomes, it was suggested that common method bias (more relevant to subjective fit) can play a role in increasing the effect between fit and outcomes but this can be a reflection of experienced reality instead of considering it merely as an artifactual bias (Kristof-Brown et al., 2005).

ii) Direct Assessment

In this approach, individuals are asked to provide their perceived degree of fit with the environment (e.g., organization, supervisor) by directly asking about their opinion of how much they think they fit with it. This approach does not involve measuring work values and instead asks directly about perceptions of fit. Therefore, this approach provides minimal information about an individual's work values and does not allow the organization to obtain insightful information on specific work values or to know which values should be targeted in future interventions (Tecle, 2020). This approach was also called *perceived* fit in previous research when Kristof-Brown et al. (2005) compared indirect objective fit, indirect subjective fit, and direct perceived fit. An example of this approach is the three-item person-organization fit measure developed by Cable and DeRue (2002) based on past research. They used the following three items to assess fit: "The things that I value in life are very similar to the things that my organization values," "My personal values match my organization's values and culture," and "My organization's values and culture provide a good fit with the things that I value in life."

Assessments

Measures of work values vary in their focus and coverage. For example, some measures are comprehensive and target the broad content of a work values

model (e.g., MIQ), while other measures focus on a single value or a specific type of value, such as work ethic (Blau & Ryan, 1997) and Protestant work ethic (Furnham, 1982). Moreover, some measures focused on assessing the work values of a specific work area, such as scientific work (English et al., 2018). Furthermore, some measures focused on assessing specific roles' value systems, such as assessing business managers using the Personal Values Questionnaire (PVQ; England, 1967). Despite the popularity of other value measures in the literature like the Rokeach Values Survey (RVS; Rokeach, 1973), this discussion will focus on assessments that include an explicit focus of measuring work-related values.

First, one of the most prominent measures of work-related values is the assessment related to TWA: The Minnesota Importance Questionnaire (MIQ; Rounds et al., 1981). As previously discussed, this measures the work values model based on TWA. This measure started as a rating measure based on a 5-point Likert-type scale. However, the results obtained from this form were negatively skewed with high intercorrelations between the scale scores, so ipsative versions were developed (McCloy, Waugh, Medsker, et al., 1999b). This decision led to developing a paired comparison ranking form; then a multiple ranking order form (the Multiple Rank Order 5 version; MRO5). Based on the MIQ measure, two measures were developed for O*NET: the Work Importance Profiler (WIP; McCloy, Waugh, & Medsker, 1999) and the Work Importance Locator (WIL; McCloy, Waugh, Medsker, et al., 1999b). WIP uses a multiple rank ordered format

(similar to MRO5), and it is administered via computer. However, it is not offered anymore on O*NET. WIL uses a Q-sorting format and is on paper, where respondents can self-administer and score the results, and it is available to use and supported with manuals on O*NET. Table 1 included the work values covered in MIQ, WIP, and WIL, along with the items from WIL.

Second, based on Super's work in the area of work values and the Work Importance Study (WIS; Super & Šverko, 1995), a few rating-based assessments were developed. The Work Values Inventory (WVI; Super, 1970), initially developed for Super's Career Pattern Study, led the way, and it was later revised under the name of Super's Work Values Inventory-Revised (SWVI-R; Zytowski, 2006), which is commercially available online. Also, the WIS Values Scale (VS; Nevill & Super, 1989) was developed to be used for the WIS project and has received extensive support from researchers worldwide (Super & Šverko, 1995). Super's model of work values, along with sample items from the VS measure, were presented in Table 2.

Third, based on Schwartz's (2012) Theory of Basic Human Values, the Schwartz Value Survey (SVS; Schwartz, 1992) is one of the most used personal value measures. It is a rating-based survey that employs an asymmetrical rating scale from -1 (opposed to my values) to 0 (not at all important) to 7 (of supreme importance) to account for respondents' frequent use of high values ratings and to

allow for greater discrimination on the "positive" side of the scale (Schwartz, 2021). However, a work-oriented measure was specifically developed based on Schwartz's values model, called the Work Values questionnaire (WVal; Consiglio et al., 2017). The ten dimensions of the model, work values definitions, and sample items from WVal were presented in Table 3.

Fourth, the assessments related to Elizur's structural model include Elizur Work Values Questionnaire (Elizur, 1991, 1994; Elizur & Sagie, 1999). The last update of that measure in 1999 included 45 items that assess life and work values. However, more examination of the psychometric properties of this measure is needed (Schleicher et al., 2011). Although Elizur's taxonomy has been further revised in the literature, the revision was conducted using a different measure based on the dissertation of Lyons (2003). The Lyons Work Values Survey (LWVS) measure considered the assessment of work values' importance and intensity by having separate rating-based components in the questionnaire addressing those aspects. Lyons et al. (2010) have built on that 2003 measure and on its update presented at a conference in 2008 (Lyons & Schweitzer, 2008) to expand their measurement to include the 32 items used in the 2010 study.

Fifth, another notable measure is the Motives, Values, Preferences Inventory (MVPI; Hogan & Hogan, 2010). This proprietary measure of the Hogan Assessment company is composed of 200 items rated using the responses of agree,

uncertain, or disagree. The primary differentiation of this measure from the previously discussed measures is that it aims at assessing ten dimensions that overlap across the areas of motives, work values, and vocational interests. These dimensions are Aesthetic, Affiliation, Altruistic, Commercial, Hedonistic, Power, Recognition, Scientific, Security, and Tradition. Each of these ten scales includes 20 items that cover the following five aspects: (a) lifestyles, which pertain to the way a person would prefer to live; (b) beliefs concerning "shoulds" and ultimate life goals; (c) occupational preferences, which includes preferences for types of work, what a good job looks like, and preferred work materials; (d) aversions, which refers to undesirable attitudes and behaviors; and (e) preferred associates, which refers to preferences on the type of persons to interact with.

Sixth, when it comes to indirect value congruency measurement, one of the most used measures in the literature is the Organizational Culture Profile (OCP; O'Reilly et al., 1991). This is a Q-sort measure where, as discussed before, respondents sort 54 items in nine categories from most to least desirable. This sorting is done two times to describe the respondent's preferences and the organization's culture separately.

Finally, an interest in developing new work value measures has recently reached a peak as multiple promising measures have been introduced in a relatively short period. For example, Abessolo et al. (2021) developed the Career Values

Questionnaire that assesses the underlying common dimensions among work values, career orientations, and career anchors. They identified eight career values: social, management, specialization, mobility, independence, salary, work-life balance, and variety. Another newly developed measure is the Work Values Importance Indicator (WVII; Taxeras, 2020), which includes 33 items with a ranking design focused on value saliency. These items correspond to 11 values of achievement, altruism, freedom, hedonism, intellect, loyalty and friendship, material wealth, morality, power, security, and status.

Moreover, a new measure based on Schwartz's taxonomy was developed called the Work Values Scale (WVS; Albrecht et al., 2020). The 52 items included in this measure are rated using a 7-point Likert-type scale in terms of their importance, and they cover 11 value dimensions corresponding to Schwartz's taxonomy. These 11 dimensions are Authority (cf. Schwartz's Power), Ambition (cf. Schwartz's Achievement), Enjoyment (cf. Schwartz's Hedonism), Variety (cf. Schwartz's Stimulation), Autonomy (cf. Schwartz's Self-direction), Social Justice (cf. Schwartz's Universalism), Environmental sustainability (cf. Schwartz's Universalism), Helping and supporting (cf. Schwartz's Benevolence), Rule respecting (cf. Schwartz's Conformity), Traditional Values (cf. Schwartz's Tradition), and Safety (cf. Schwartz's Security).

Additionally, a new version of the Work Values Questionnaire (WVQ; (Furnham et al., 2002; Mantech, 1983) was introduced by Furnham et al. (2021). In this modified version, they expanded the measure to 44 items rated on a 10-point Likert-type scale in terms of their importance. They proposed that these items map on two higher-order intrinsic versus extrinsic factors, in alignment with the two-factory theory involving the motivational dimensions of *hygiene* and *motivator* (Herzberg et al., 1959). They further proposed in their model that the intrinsic factor includes the three dimensions related to the Self-Determination Theory (Deci et al., 2017), which are autonomy, recognition (competency), and affiliation (relatedness). Moreover, they proposed that the extrinsic factor would include security, compensation, and conditions, in line with Furnham et al.'s (2009) findings. The results have supported this 2 x 3 factorial structure.

In sum, work values assessments can be valuable for individuals to get insights into their work values and what is not sufficiently fulfilled, and for organizations to recruit employees with higher fit (Rounds & Leuty, 2020). However, a limited number of work values measures are commercially available with sufficient evidence of reliability and validity (Rounds & Leuty, 2020; Taxeras, 2020). Furthermore, the lack of focus on user experience and clarity of work values measures have limited the application of work values measures in the business world (Taxeras, 2020). Future research needs to examine further the reliability and validity of work values assessments to support their use in practice. So far, the WIL

and WIP measures are at an advantage compared to all other measures because they provide a direct link to connecting individuals' results to the vast amount of information about occupations that is available on O*NET, providing a more coherent and comprehensive understanding of individuals' work values and how they connect to the workplace.

2.1.9 Group Differences

There has been a longstanding interest in examining differences in work values across different groups (Zemke et al., 2013). For instance, a recent study examined the differences in work values among individuals from 37 countries, and it was found that employees from countries with higher levels of the Human Development Index are more able to satisfy desirable intrinsic work values (Baranik et al., 2022). This result indicated that some groups might have more difficulty fulfilling their preferred work values given different contexts (e.g., prominent socioeconomic factors). Similar findings were obtained in a recent study, which suggested that individuals from more advantaged social conditions and with more labor market resources valued interesting work more than extrinsic rewards (Kalleberg & Marsden, 2019). Other researchers have examined differences among groups of various ages, generations, gender, and race. The following section will discuss the literature on these differences.

Age and Generations

Much of the recent interest regarding work value differences has been connected to generational differences. This may have been driven by the increased age diversity in the workplace and the popular belief that there are generational differences at work (Parry & Urwin, 2011). However, empirical academic support for this topic has been, at best, mixed (Parry & Urwin, 2011).

Some studies have found no differences, and others have found differences that are small in effect size. For example, Dick's (2019) results indicated that there were more similarities than differences in the work values of 81 participants of Generations X (born between 1965 and 1980), Y (born between 1981 and 1994), and Z (born after 1994). Another study that surveyed 400 participants in 10 public hospitals in Egypt found that all groups valued instrumental work values equally high. However, other work values differed across generational groups (Dajani, 2018). Furthermore, a study of 504 Auckland employees representing the Generations born between 1925 and 2000 found that younger groups valued the status and freedom work values more than the oldest group. On the other hand, Baby Boomers (born between 1946 to 1964) expressed higher person-organization values fit with extrinsic and status work values compared to Generations X and Y.

Parry and Urwin (2011) provided an informative discussion on the literature's generational difference studies. They noted that many studies fail to

differentiate between the effects of various related concepts like age, generations, cohorts, and periods of time. Specifically, the difference between age and generational membership cannot be addressed through cross-sectional studies that confound generational effects and age effects. Age effects occur as individuals mature and as their life roles evolve at different stages, regardless of their birth dates. Cohorts with pre-defined cut-off year dates are used as a proxy for generational membership. Generations relate to shared experiences of the environment (e.g., historical and political events, collective culture). Also, the time when the data collection takes place can affect the reported work values. They called for disentangling age and generational differences in studying work values differences, clarifying the definitions of generations versus cohorts when operationalized in studies, and considering additional contextual factors such as national context, gender, and ethnicity.

In line with these considerations, Twenge et al. (2010) have examined work values collected over various time points to isolate differences related to generations and age in a sample of 16,507 high school seniors representing the Generations of Baby Boomers, X, and Y. Their findings showed that Leisure values increased gradually across the generations, while the importance of work centrality has decreased. Also, extrinsic values were highest for Generation X. They did not find support for the notion that Generation Y favors altruistic work values more

than others. In addition, Generation Y gave lower social and intrinsic values ratings than Baby Boomers.

Furthermore, Hansen and Leuty (2012) examined the work values of 1,689 clients of a vocational assessment clinic. This study examined differences across the generations of Silent Generation (born between 1925 and 1945), Baby Boom, and X after accounting for age. Their results suggested that workers from the Baby Boom and Generation X placed less importance on Status and Autonomy than workers from the Silent Generation and placed higher importance on Working Conditions, Security, Coworkers, and Compensation. Moreover, despite the small differences across the generations, the generational effect was larger than that of age.

Finally, a recent study has analyzed data from the General Social Survey and the International Social Survey Program (Kalleberg & Marsden, 2019). They found that the largest effect on work values was related to historical period, where in recent periods, Americans have put a higher importance on the work values of security, income, and opportunities for advancement, given that these types of rewards have become more challenging to attain recently. As for age, they found differences in the work value of work centrality across ages, where the value decreased steadily until close to the age of retirement (60-65), then it increased again during retirement age (highest was for ages more than 75). Also, younger

ages showed higher interest in interesting work, while individuals in their prime working age placed higher importance on income and security. They found few differences in work values across generations or cohorts. Finally, they noted that we might be witnessing global generations exposed to similar environmental conditions (e.g., born to the abundance of internet access) and that these global similarities are more influential on differences in work values.

It is worth noting that the studies that found small to non-existent differences in generational differences in work values resonate with studies looking at generational differences in other organizational constructs. For instance, a meta-analysis of generational differences in work attitudes (job satisfaction, organizational commitment, and turnover intention) found that the relationship between generational membership and work outcomes was moderate to small and non-existent in many cases (Costanza et al., 2012). Understandably, organizations may try to adapt to newer generations that will shape their future workforce, but due diligence may be needed in understanding differences related to work values before making final decisions about observed differences in the workplace. If solid evidence is found of these differences, implications of these potential differences should be further investigated (Rounds & Leuty, 2020).

Gender

Research on differences in work values between men and women has shown inconsistent results. Similar to generational differences, the findings mostly favor small to non-existent differences. This is in line with previous research on the gender similarities hypothesis that males and females are similar on most psychological variables and was supported by the examination of 46 meta-analyses (Hyde, 2005).

For instance, Watson and Ryan (1979) found no significant differences in the work values of female and male managers. On the other hand, a meta-analysis of 242 samples covering the period from 1970 to 1998 found small differences with effect sizes mostly of .20 or less (Konrad et al., 2000). The researchers stated that the observed small differences aligned with gender roles and stereotypes. Males prioritized earnings, promotions, freedom, challenge, leadership, and power. In contrast, females valued good hours, an easy commute, interpersonal relationships, helping others, and intrinsic job aspects. The higher emphasis on work values related to social interactions by women mirrors findings of vocational interests differences, where women showed higher people-oriented and social vocational interests than men (Su et al., 2009).

Recent studies have reported similar findings. Dajani's (2018) results showed that some work values were different between genders and that females

gave higher importance to the work values of feedback, hours of work, job security, balance, recognition, supportive supervisor, co-workers, fun, social interaction, and help people than men. Furthermore, in examining the data from the International Social Survey Programme across 37 countries, gender did not moderate the relationship between desired and obtained work values (Baranik et al., 2022).

Furthermore, a study that used 12 national samples of full-time individuals' work values from 1973 through 1990 found no support for gender differences in work values (Rowe & Snizek, 1995). Instead, they found that age, education, and occupational prestige were the determining factors for work values in their study. They argued that differences in work values based on gender are minimal, at best, and that some individuals stress them to reinforce gender and role stereotypes, potentially leading to inequality and discrimination in the workplace. They discuss that several factors may have contributed to the inconsistency of results regarding work values differences between genders, including sample compositions, small sample sizes of homogonous workers (not representative of the workforce), and selective interpretation of research findings (ignoring the remarkable similarities).

Race

Research on race and ethnicity differences in work values has been limited (C. H. Robinson & Betz, 2008). This limited research has focused on differences between White and Black/African Americans (Shapiro, 1977; Watson & Barone,

1976; Watson & Simpson, 1978; Watson & Williams, 1977). White-Black differences in work values have been inconsistent, showing no differences or that Black workers put a significantly higher importance on extrinsic work values compared to White workers' higher valuation of intrinsic work values (Hartung et al., 2010). Also, there is evidence that accounting for socio-economic and family background factors removes much of these differences (Kashefi, 2011).

Watson and Barone's (1976) results suggested that more similarity is found between the Black and White managers. Both Black and White managers had their primary work value as pragmatic, followed by moralistic, whereas a few of both groups have put importance on the affect orientation. In addition, a study of a sample of 322 middle managers from a major public utility firm in the U.S. showed that Blacks valued the independence work value more than Whites (Brenner et al., 1988).

Furthermore, Kashefi (2011) proposed that the socio-economic improvements of Black workers after entering the workplace may have played a role in transforming their work values. Kashefi mentioned that this is in line with Wilson's (2010) discussions of how Blacks and Whites are doing the same in high-status occupations (e.g., managers, professionals, and technicians) and that they are expected to have comparable work attitudes. Using the 2006 General Social Survey data, Kashefi (2011) examined a sample of 3,284 Whites and 634 Blacks and

analyzed their differences in the intrinsic, extrinsic, relational, and enhancement work values. Enhancement work values refer to individuals' preferences for occupational prestige and power (e.g., opportunities for advancement). He found that, consistent with previous research, Whites placed a higher value on intrinsic rewards, whereas Blacks valued extrinsic, relational, and enhancement work values more. However, after accounting for occupational level and education, most of these differences have disappeared for Blacks who held high-status occupations, potentially driven by modifying their work attitudes after entering the workforce. Blacks in high-status occupations had the same levels of extrinsic, intrinsic, and relational work values (but not the enhancement work values) as Whites.

In summary, based on our discussion of group differences, it seems promising that most of the evidence of group differences in work values showed low or non-existent differences. This could be especially helpful when practitioners consider which assessments can help decrease the potential for adverse impact.

2.1.10 Stability

Researchers have discussed the stability of work values as seemingly an integral part of their nature. Value systems have been described as a primary component of individuals' personality structure, and thus a relatively permanent and essential conscious component of an individual's psychological makeup (Crites, 1961; Rokeach, 1973; Ronen, 1978). Some studies have evaluated the

stability of values by merely examining the test-retest correlations of individuals'
value raw scores or rank orders. Others have elaborated more by differentiating
between mean-values stability, rank-order stability, and individual profile stability
(Leuty, 2013). Mean-values stability refers to the consistency of mean level scores
of value scales across the population over a period of time. Rank-order stability
refers to the value rank consistency across the population, regardless of any change
in mean-level scores. Individual profile stability refers to the intraindividual
consistency of values' rank order over time at an individual level. In general,
previous research has shown strong evidence of work values stability over various
types of samples and periods of time.

Mortimer and Lorence (1979) proposed two possible mechanisms
explaining the relationship between work values and work experience over time.
The first is occupational selection, where individuals' values are formed early in
their lives and act as a guide when choosing their work experiences. The second is
occupational socialization which pertains to the role that work experiences play in
changing, molding, or reinforcing the work values of individuals. Mortimer and
Lorence (1979) suggested that both mechanisms may work in tandem where
individuals' initial level of work values becomes the determinant of which work
experiences to engage in; then, work experiences provide individuals with job
rewards that can reinforce and increase or change individuals' beliefs in their initial
work values based on experiencing these rewards. These two mechanisms illustrate

the importance of work experiences in increasing the stability of work values over time driven by the increasing reinforcement of work-related rewards. Both mechanisms were supported by the results of this study and a following study (Lindsay & Knox, 1984).

Furthermore, one of the most informative studies on the stability of work values was a recent meta-analysis of work values longitudinal studies (Jin & Rounds, 2012). In examining 22 studies, Jin and Rounds used the classification of four work values: intrinsic, extrinsic, social, and status (Ros et al., 1999). Their analysis of rank-order stability indicated that work values are stable individual differences ($\rho = .62$). The rank-order stability of work values was lowest during the college years (age 18-22). Mean level results suggested higher importance was placed on intrinsic values during these college years, whereas all the remaining values were deemphasized. Then, rank-order stability levels were highest after entering the workforce (age 22 and older). Mean level results suggested that this period initially witnessed an increase in extrinsic values and a decrease in all the other values (age 22-26); then, mean level results suggested the importance placed on extrinsic values continued to increase along with an increase in status values (age 26 and older). These mean-level changes in work values can be attributed to the maturation process of individuals as they evolve through life stages with additional responsibilities and societal or historical changes witnessed by the population.

Jin and Rounds (2012) also found that the rank-order stability of Baby Boomers was higher than Generation X. They stated that their findings indicate that work values were more stable than personality across all age groups but less stable than vocational interests during college years and adulthood. Accordingly, the stability of work values was found to be lowest during the college years and highest during adulthood as it plateaued afterward.

Moreover, Leuty (2013) conducted a test-retest study on 995 individuals of a young group (mean age for men and women was 21.5 and 23.5, respectively) using Super's Work Values Inventory-Revised (SWVI-R) over a period between 12 and 18 months (mean = 13.61). Her results indicated that mean-level scale scores were stable over time for the whole sample (both men and women), and individual profile stability was higher than rank order and raw score stability.

Additionally, previous studies have also examined the stability of work values congruence, indicating that, like individual work values, work value congruence is stable over time. For instance, DeRue and Morgeson (2007) studied person-team fit, operationalized as values congruence, in a sample of 248 undergraduate and graduate business students during a 15-week management course. Their results indicated that person-team fit (value congruence) was stable over time.

In sum, the evidence from previous studies suggests that the stability of work values is high over prolonged periods (e.g., 10 years) and is most stable after entering the workforce (age of 22 and older). This status is fortunate given that the period following college and until retirement is the one most important for organizational practitioners and researchers. Given the stability of work values, we will examine their individual and organizational outcomes in the next section.

2.1.11 Outcomes

Values have been connected to many important individual and organizational work-related outcomes (Schleicher et al., 2011). Generally, the literature shows that values congruency between the individual and the environment is associated with various positive outcomes. On the other hand, conflict in values is associated with negative individual and organizational outcomes.

First, values have been found to be associated with attitudinal outcomes. For instance, value congruency improved job satisfaction (Adkins et al., 1996; J. R. Edwards & Cable, 2009; Kristof-Brown et al., 2005; Ostroff et al., 2005; Ravlin & Meglino, 1989), employee engagement (Schreurs et al., 2014), and organizational commitment (Kristof-Brown et al., 2005; Meglino et al., 1989; Ostroff et al., 2005).

Second, values have been associated with work choice, such as job choice, where employees chose jobs aligned with their work values (Judge & Bretz, 1992).

120

Work values have also been associated with task preference and intrinsic motivation. For example, Tang and Baumeister (1984) found that labeling play tasks as work led to increased intrinsic motivation for individuals who highly value work. Furthermore, values have also been associated with decision-making (Barnett & Karson, 1987; England, 1967).

Third, work values have been related to fit. For instance, in a longitudinal study of Finnish participants, Sortheix et al. (2015) found that intrinsic work values predicted person-job fit after two years. They also found that rewards work values predicted lower chances of unemployment, while security work values predicted higher chances of unemployment. They discussed that security work values involve seeking stability and safety and might discourage individuals from adapting to changing business situations and being flexible, which can hurt their chances of employment in a dynamic economy. Moreover, work values congruency with an individual's potential leader has been associated with higher anticipated satisfaction with the leader (Meglino et al., 1991).

Fourth, work values have been linked to employee behaviors. Value congruency was associated with lower tardiness and absence (Adkins et al., 1996), lower turnover intentions (Kristof-Brown et al., 2005; Ostroff et al., 2005), lower actual turnover (Arthur et al., 2006; Hoffman & Woehr, 2006), higher job

performance (Adkins et al., 1996), and higher task and citizenship performance (Hoffman & Woehr, 2006).

Fifth, values have been linked to additional individual and organizational outcomes. Values were linked to managerial success (financial and status success), where specific values were significantly associated with success in the company, such as human pragmatism (Jaskolka et al., 1985). Also, perceived value congruence between department employees and top managers significantly predicted greater departmental power (Enz, 1988). In addition, values were related to resistance to organizational change (Oreg et al., 2008) and supporting Corporate Social Responsibility initiatives (Fukukawa et al., 2007; Petrick et al., 1993; Shafer et al., 2007).

Finally, value conflict in the literature has been associated with increased stress (Bouckenooghe et al., 2005) and reduced job, family, and life satisfaction (Carlson & Kacmar, 2000). In conclusion, the individual and organizational outcomes related to individuals' work values encourage practitioners and researchers alike to understand the effect of work values in the workplace. Given the lack of clear guidance in the literature regarding the connection to one of the most important organizational outcomes, job performance, the current study will shed light on this link between work values and job performance and help lay the foundation for future related research.

2.2 Job Performance

Performance is quite possibly the most crucial construct when examining an employee's success within his or her role. In the next section, we will briefly discuss its nature, taxonomy, operationalization, and antecedents.

2.2.1 Nature

When thinking about employee job performance, it is standard to consider employees' behaviors or the outcomes and results of these efforts. However, previous work on the criterion of job performance has focused on the behavioral component in defining and measuring performance (e.g., Campbell, 1990). Although employees' efforts, observed in the form of their behaviors, should be directed towards generating organizationally valuable results and outcomes, individuals are in control of their behaviors but not necessarily the downstream outcomes of those behaviors. For example, a sales employee may have done everything as instructed to promote the sales of the organization's products. However, other factors, such as the organization's resources, pricing, and marketing activities, in addition to the competitors' actions and market shares, may be helpful or detrimental to reaching the desirable sale targets set for the employee. Accordingly, it is understandable that the focus can be geared towards what the employees are in control of and how they can get feedback towards improving it.

Nevertheless, this focus on behaviors does not mean that the results or outcomes of these behaviors should be entirely out of consideration (Murphy et al., 2018). If ideal employee behavior does not lead to organizational goal achievement, then there is a business problem, which can be in the organization and its business plan. Also, previous findings suggest that the results of employees' behaviors affect the evaluation of these behaviors (Martell et al., 1995). This relationship between behaviors and outcomes has encouraged researchers to provide a more comprehensive definition of job performance as "the set of behaviors in the workplace that are relevant to achieving the legitimate goals of the individual, work unit, and organization" (Murphy et al., 2018, p. 69). This inclusion of both behaviors and outcomes in thinking about performance has led to operationalizing it in subjective and objective forms, as will be discussed in the upcoming Operationalization section. We will now discuss the different aspects of job performance examined in the literature.

2.2.2 Taxonomy

Given that taxonomies of job performance played an essential role in developing performance measures, various conceptualizations of job performance have been presented. Previous research on modeling job performance included considering it as one general overall performance factor (Ree et al., 2015; Viswesvaran et al., 2005). Other researchers have treated job performance as a multidimensional construct, such as when Motowildo et al. (1997) proposed that

job performance is behavioral, episodic, evaluative, and multidimensional. Various taxonomies have been developed to cover the multidimensional nature of performance, but the one that received the most research focus was related to the research done by Campbell (see Campbell & Wiernik, 2015).

The initial behavioral modeling of performance by Campbell et al. (1993) included the eight dimensions of job-specific task proficiency, non-job specific task proficiency, written and oral communication task proficiency, demonstrating effort, maintaining personal discipline, facilitating peer and team performance, supervision/leadership, and management/administration. Then, Borman and Motowidlo (1993) expanded the performance criterion to include contextual performance, later referred to as organizational citizenship behavior (OCB). This performance aspect refers to employee behavior that does not directly result in the execution of task-related activities but helps improve the work environment and helps maintain the organizational, social, and psychological environment necessary for the facilitation of task-performance (Motowildo et al., 1997). Given that differentiation, Motowildo et al. (1997) described their theory of job performance distinguishing between task and contextual performance at the workplace.

Later developments in modeling performance included the addition of counterproductive work behaviors (CWBs). CWBs were defined as "voluntary behavior that violates significant organizational norms and in so doing threatens the

well-being of the organization, its members, or both" (S. L. Robinson & Bennett, 1995, p. 556). Some researchers argued that CWB might be the polar opposite of CWB (Austin & Crespin, 2006), supported by the high negative correlations between them and suggested that it could be helpful to combine them in a composite in some cases (Sackett, 2002). On the other hand, other researchers have used factor analysis to examine the construct validity of CWB, and their results supported that OCB and CWB are separate constructs (Kelloway et al., 2002).

Moreover, adaptive performance was another expansion of the job performance domain. It has been defined as "altering behavior to meet the demands of the environment, an event, or a new situation" (Pulakos et al., 2000). This performance aspect focused on dealing with uncertainty at the workplace, handling problems creatively, and handling emergencies or crises, among other dimensions discussed by Pulakos et al. (2000).

Furthermore, Griffin et al. (2007) proposed a model of positive work role behaviors that included three types of job performance: (a) proficiency, which focuses on fulfilling the prescribed requirements of the role; (b) adaptivity, which refers to coping with and responding to change; and (c) proactivity, which focuses on the initiation of change and being future-directed. They further proposed that each of these performance categories can be categorized according to the focus of

126

the behaviors and what they contribute to: (a) individual effectiveness, (b) team effectiveness, or (c) organizational effectiveness.

Finally, two decades after the initial development of Campbell's job performance model, Campbell (2012) revised his performance modeling to include OCB, CWB, and adaptive performance. The model's revised eight dimensions are: 1) Technical performance, 2) Communication, 3) Initiative, persistence, and effort (cf. OCB), 4) Counterproductive work behavior (CWB), 5) Supervisory, managerial, executive (i.e., hierarchical) leadership, 6) Hierarchical management performance, 7) Peer/team member leadership performance, and 8) Peer/team member management performance. Campbell and Wiernik (2015) discuss that adaptive performance may be viewed more in light of performance dynamics (i.e., the process and context surrounding performance) along with active and proactive performance and that performance content's latent structure and adaptability address different issues.

2.2.3 Operationalization

With regard to operationalizing job performance, studies have focused on the two primary units of analysis of individual performance and team/group performance (Murphy et al., 2018). Although individual performance assessment is considered the norm, organizations have also used team-based performance evaluations and connected them to group rewards (Murphy et al., 2018). The

127

assessment of individual job performance emphasizes each individual's role in the organization to achieve its goals. Making employees accountable for their efforts and motivating them to attain individual rewards has been the primary way organizations define the transactional relationship between a job incumbent and the employer. Individuals are more in control of their own behaviors and may not be able to control others' behaviors in the workplace.

However, many work areas require the interdependent cooperation of employees, and more work has become team-based. Therefore, there has been more focus on evaluating and rewarding team performance. Team job performance could be more suitable for objective outcome-oriented performance measures, and the rewards can include profit sharing for groups that achieve group-level goals (Murphy et al., 2018). The relationship between individual and team job performance is not exclusive as an employee can be evaluated on both individual and team goals and could be rewarded for each of these goal types independently.

Given that individual performance can be directly affected by individual factors (including work preferences and, more specifically, work values), the focus of our meta-analysis study will be on the criterion of individual job performance. This individual-level focus allows us to observe the link between individual work values and individual job performance, limiting the performance domain to behaviors under individuals' control.

2.2.4 Methods of Measurement

Job performance measures can be classified as either subjective or objective. Subjective measurement is the case when an evaluation by an individual (e.g., supervisor) is needed to rate the extent to which a job element has been appropriately performed. Performance ratings, whether supervisor-rated or self-reported, are examples of subjective measurement. One advantage of subjective measurement is that it can be designed to cover the performance dimensions of a job role comprehensively. On the other hand, subjective measures are prone to evaluation biases (Murphy et al., 2018). Given the relative ease of administration and the generalized applicability of subjective performance measures across job roles, they are the predominant focus of practitioners and researchers alike.

In contrast, objective performance measurement describes measures that do not require human judgment as part of the process, such as production output, sales numbers, or time needed to complete a job (Murphy et al., 2018). One advantage of objective measures is that they are not vulnerable to human biases. However, these measures are identified and used by organizations based on their feasibility, given the limited availability of objective measures for many jobs or parts of each job role. This limitation makes objective measurements hard to generalize across jobs. In addition, they often do not cover all parts of the job, making these measures vulnerable to criterion deficiency where they can fail to fully cover the domain of the performance being measured (Murphy et al., 2018). Both subjective and

objective measures have advantages and disadvantages, and they can complement each other to give a more holistic view of employees' job performance.

2.2.5 Antecedents

In general, job performance has been hypothesized to be directly predicted by declarative knowledge, procedural knowledge and skills, and motivation (Campbell et al., 1993). These predictors are considered the determinants of performance. However, discussions of job performance predictors usually focus on the antecedents of these performance determinants, such as abilities, personality, interest, education, training, experience, aptitude/treatment interactions, and motivational variables (Campbell et al., 1993). These antecedents have been proposed as affecting job performance through the mediating variables of declarative knowledge, procedural knowledge and skills, and motivation (Cortina & Luchman, 2013).

Numerous studies and meta-analyses have focused on the predictive validity of specific predictors. As discussed earlier, studies have examined intelligence (Hunter & Schmidt, 1996), personality (Judge et al., 2013), job knowledge (Dye et al., 1993), motives (R. E. Johnson et al., 2013), needs (Slocum, 1971), vocational interests (Nye et al., 2017) and work values (Jalalkamali et al., 2016; Tecle, 2020). Results have supported these factors as predicting aspects of job performance.

It is worth noting that researchers have discussed the varying importance of these antecedents in predicting specific types of job performance. For instance, Motowildo et al.'s (1997) theory of individual differences in task and contextual performance proposes that task performance and contextual performance differ in their antecedents. Cognitive abilities are proposed to predict task performance, and this relationship is mediated by task habits, task skill, and task knowledge. On the other hand, contextual performance is predicted by personality variables, and this relationship is mediated by contextual habits, contextual skills, and contextual knowledge. They also note that there can be some crossover effects, where cognitive abilities can influence contextual knowledge, and task habits can be affected by personality variables. This conceptualization suggests that task performance is mainly influenced by cognitive ability, whereas contextual performance is mainly influenced by personality variables.

2.3 Work Values as Predictors of Job Performance

Given the lack of clarity on the relationship between work values and job performance in the literature, this section will start by discussing theories that can potentially explain the influence of work values on job performance. Then, we will provide examples of previous studies that have connected work values to job performance. Finally, we will discuss evidence from the literature about the estimates of this relationship.

2.3.1 Supporting Theories

A limited number of theories have focused on work values as the primary foundation to explain behavior. Most of these theories appear to have been developed within the realm of career choice and development. For instance, Brown (2002) developed a values-based theory of occupational choice, satisfaction, and success. This theory expands the theorization of the occupational choice-making process by postulating that cultural values alongside work values are two main determinants of this process. However, compared to this focus on career choice as an outcome, our focus in this section pertains to theories that more explicitly target job performance as an outcome.

How do work values affect performance? To answer this question, we will explore theories and propositions discussed in the literature that could explain why work values can independently affect job performance and why work values in the form of value congruence can affect job performance. A summary of the mechanisms that will be discussed in the following section is presented in Figure 7. We will start by explaining work values' independent effect on job performance.

Figure 7

A Summary of Proposed Mechanisms for the Work Values-Job Performance
Relationship
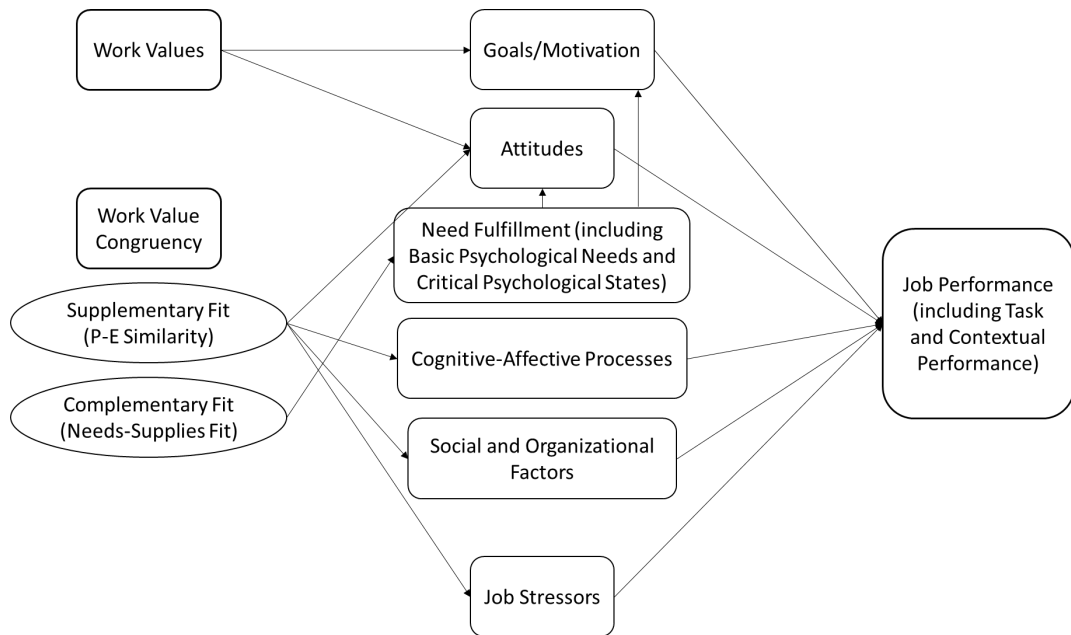
Independent Work Values Effect

As previously discussed under work value's operationalization, researchers

have examined the direct effects of work values on behaviors regardless of their

congruence with the environment. This sets work values apart from other work

preference constructs, such as vocational interests, that primarily affect outcomes

only based on their congruence with the environment. Instead, given that work

values are defined as guiding beliefs related to desirable work outcomes (e.g.,

achievement, recognition, or compensation), they can influence employee behavior to seek these work rewards in any given job. It could be the case that this effect of work values on job performance becomes stronger when occupational value profiles match the individual's work values pattern, but this does not limit us from exploring, understanding, and estimating the independent effect of work values on job performance.

Our discussion in this section will be organized according to the explanatory mechanism suggested as playing a role in the work values-job performance relationship. This discussion involves theories positing work values as affecting job performance through goals/motivation and attitudes.

A) Effect Through Goals/Motivation

Human behavior is goal-directed (Diefendorff & Chandler, 2011). With discussions positing goals as drivers of all human activities (Locke & Latham, 1990), work values can be examined through their role in goal choice and striving. Work values are expected to be a leading motivational player in behavior as they "form the basis for attributing worth to situations and objects" (Brown & Crace, 1996, p. 2), and they act as normative standards that guide the evaluation and choice of behavior among alternative behaviors (Latham & Pinder, 2005). Next, we will show how previous researchers have considered values in the expectancy-

valence frameworks to understand and predict work-related behaviors (Latham & Pinder, 2005).

a. Valence-Instrumentality-Expectancy (VIE) Theory

Work values play a cognitive role in expectancy theories (Rounds & Leuty, 2020). One of the first and seminal theories of work motivation is VIE theory developed by Vroom (1964). This theory postulates that when individuals are deciding on which activity should be pursued, they think of the alternatives in terms of their valence, instrumentality, and expectancy. Valence refers to the attractiveness, desirability, and importance of the rewards associated with pursuing an activity or achieving a goal. Instrumentality pertains to the likelihood of attaining that desirable reward when the activity or task is achieved. Expectancy refers to the perceptions of whether personal capabilities and individual effort can lead to achieving the activity or task of interest. In this conceptualization, work values are seen as related to the valence component and direct individuals' attention and effort towards goals deemed important and desirable to the individual. This guiding motivational component of valence is hypothesized to interact with the other components of instrumentality and expectancy to form the motivational force guiding individuals to perform a course of action, such as tasks constituting job performance.

b. *Modern Expectancy-Value Theories*

Building on Vroom's (1964) theory, other researchers have made additions and refinements to expectancy theory leading to modern versions of the concept (Eccles et al., 1983; Eccles & Wigfield, 2002; Feather, 1988; Wigfield & Eccles, 2002, 1992). Of interest to our discussion is the Eccles et al. Expectancy-Value Model (Eccles et al., 1983). This model proposes that perceptions of competence, perceptions of task difficulty, and individuals' goals and self-schema influence expectancies and values, which directly affect task choice, persistence, and performance (Eccles & Wigfield, 2002).

It further expands upon initial expectancy theories by elaborating on four components of task-value (i.e., valence): (a) attainment value, which refers to the personal importance of successfully performing the task; (b) intrinsic value, which is the enjoyment obtained from performing the task; (c) utility value, which relates to the extent of which performing this task contributes to the achievement of short- and long-term goals; and (d) cost, which refers to the negative consequences of engaging in the performance of this task, such as the amount of effort exerted. This expansion on the valence component related to work values places more importance on work values' mediating cognitive role in evaluating task importance and prioritizing rewards in the performance of tasks.

c. *Goal Setting Theory*

As we have discussed earlier under the construct clarification of work values versus goals, goals are more specific than work values, or in other words, work values are more abstract "trans-situational goals" (Latham, 2007). Given the specificity of goals, it was noted that "goals are the mechanism by which values lead to action" (Latham, 2007, p. 150). One of the most influential theories in the science of motivation is the theory of goal setting (Locke & Latham, 1990). The basic tenet of this theory is that specific challenging goals lead to higher performance. This relationship is affected by various mechanisms and moderators, which can position work values as one of the determinants of the goals-performance relationship. The mechanisms of this relationship include choice/direction, effort, persistence, and strategies, while the moderators include goal commitment, goal importance, self-efficacy, feedback, and task complexity. Work values can be linked to the choice/direction mechanism of action and the moderators of goal commitment (i.e., driven by the goal's location in an individual's hierarchy of values) and goal importance. These factors are influenced by work values' role as guiding principles in the goal setting process.

Accordingly, job performance can be expected to increase through specific goals that contribute to fulfilling the higher-order goals of work values. This increase in job performance will likely lead to the attainment of the desirable

137

rewards that motivated the individual to pursue this goal in the first place. These attained rewards can reinforce and encourage the individual to pursue similar or more challenging goals, which further contribute to fulfilling individuals' work values.

B) Effect Through Attitudes

As previously discussed under the construct clarification of work values versus attitudes, there is a close relationship between values and attitudes, given their similarities. We discussed that work values inform and influence job attitudes and that in turn affects job performance. This notion posits attitudes as mediators for the work values-job performance relationship. Given that we have discussed the relationship between work values and attitudes in more detail, we will give a brief overview of their relationship through the following theories and link that to job performance.

a. Theory of Planned Behavior

Ajzen's (1991) theory of planned behavior describes how beliefs, attitudes, and intentions lead to behaviors. This theory's basic tenet is that beliefs (behavioral, normative, and control beliefs) and attitudes affect behavioral intention, which in turn leads to actual behaviors. In the first stage of the model, it is hypothesized that different types of beliefs influence each other and attitudes

before affecting intention. A more detailed look at the model indicates that behavioral beliefs lead to attitude towards the behavior, normative beliefs lead to subjective norms, and control beliefs lead to perceived behavioral control. Then, attitude towards the behavior, along with subjective norms and perceived behavioral control, act as predictors of intention, which leads to behavior (i.e., performance). In this way, attitudes mediate the relationship between beliefs and behavior. Based on these propositions, work values can be linked to the beliefs component of this theory, given that values involve personal beliefs about prioritized work-related outcomes.

Accordingly, in light of this theory, we can expect work values to influence job attitudes, which affect performance-related intentions, resulting in actual job performance. For instance, placing importance on the work value of achievement can influence job engagement attitudes by forming a favorable judgment of engaging with a specific job to fulfill achievement needs, which can lead to intentions of putting more effort into one's job and eventually exhibiting better job performance.

b. Values-Attitudes-Behavior Hierarchy

The Values-Attitudes Behavior Hierarchy cognitive model was a more explicit attempt to link values to behavior (Homer & Kahle, 1988). This model proposes that values inform attitudes as part of a causal chain that starts with

139

abstract values influencing midrange attitudes that affect specific behaviors. Previous findings have supported this model (e.g., Homer & Kahle, 1988; Milfont et al., 2010). Also, as previously discussed, Stern et al. (1995), in their study of ecological concern, have expanded upon the Values-Attitudes-Behavior Hierarchy model. As presented in Figure 5, they proposed that social structures and the environment affect our values, which inform our general beliefs and worldview, which in turn influence specific attitudes and beliefs that influence personal norms, which affect behavioral commitments and intentions, resulting in behavior.

Work Value Congruence Effect

In the previous section, we examined the independent effect of work values on job performance. In the current section, we discuss the effects of work values in the presence of matching work value profiles presented in the environment. With the addition of a matching environment, expectations regarding the mechanisms involved in linking to job performance change to some degree. Indeed, although the theories suggested here offer one similar mechanism/mediator (attitudes), a few different mechanisms will be discussed that are unique to the effect of work value congruence on job performance (cognitive-affective processes, social and organizational factors, and job stressors).

A) Effect Through Attitudes and Need Fulfillment

　　　　a. Person-Environment Fit (Through Attitudes and Need

　　　　　　Fulfillment)

The depictions of work values (the rewards desired by the individual and offered through work) and work value congruence (the matching between prioritized outcomes of the environment and the individual) are best thought of generally as forms of the match between an individual and a work environment. Person-Environment fit (P-E fit) theories (e.g., Su et al., 2015; Van Vianen, 2018) have been extensively researched in organizational sciences given the relationships established between individuals and their workplaces and the consequences of these different relationships (e.g., person-organization, person-supervisor, person-job). The fundamental propositions of P-E fit theories are: (a) individuals seek and create work environments where their traits can be behaviorally manifested, (b) the degree to which there is a match between individuals and their work environments leads to important outcomes (e.g., performance, satisfaction, turnover) such that the higher the fit, the better the outcomes, and (c) P-E fit is an on-going reciprocal process where both individuals and environments shape each other (Su et al., 2015).

This P-E fit can be further classified as two types of compatibility: supplementary or complementary (Su et al., 2015). Supplementary fit refers to the

degree of similarity between an individual and the environment. Complementary fit refers to the degree of exchange between the individual and the environment aiming at making them complement each other's requirements. Supplementary fit, also known as P-E similarity, can be represented by work value congruence where an individual's work values would match those of the individual's environment (e.g., organization, supervisor, occupation, team members). On the other hand, complementary fit can be further categorized as either abilities-demands fit or needs-supplies fit. Abilities-demands fit refers to whether an individual's abilities (e.g., knowledge, skills, and abilities) fulfill the requirements of the environment to perform the work needed towards achieving organizational goals successfully. On the other hand, needs-supplies fit refers to the extent to which the environment fulfills individuals' needs (e.g., work values, work resources, or developmental job experiences; Cao & Hamori, 2020) when the employee engages in this working relationship. Needs-supplies fit can be represented by the extent to which an environment satisfies individuals' work values, and for this reason, different terms for that type of needs-supplies fit have been used in previous studies, such as supplies-values fit and value fulfillment (Marstand et al., 2017). Psychological needs fulfillment has been the most common way of examining this complementary fit type of needs-supplies fit (Cable & Edwards, 2004).

Based on these P-E fit classifications, it seems that the congruence effect of work values is represented through P-E similarity (supplementary fit), and the

consequences of direct effects of work values are reflected in needs-supplies fit (complementary fit). We note that the independent effect of work values and the needs-supplies effect are similar. However, they are not the same, as the direct effects of work values focus on the stage prior to performing the goal and attaining the expected rewards, whereas when the goal is pursued, and the rewards are received, that is when needs-supplies fit occurs and it becomes a motivational force towards additional performance. We propose that P-E similarity (value congruence) affects job performance through attitudes, while needs-supplies fit affects job performance through need fulfillment and attitudes.

Our proposition of linking P-E similarity to job performance through job attitudes has been suggested by previous research. For instance, Arthur et al. (2006) noted that Person-Organization fit (i.e., P-E similarity) is expected to have an indirect effect on job performance through attitudes (e.g., job satisfaction). This is in line with the previous research suggesting that P-E fit has strong relations with work attitudes (e.g., Kristof-Brown et al., 2005), which in turn has more substantial relationships with job performance (Schleicher et al., 2011), as hypothesized by the Theory of Planned Behavior (Ajzen, 1991).

The proposition of linking needs-supplies fit to performance through need fulfillment and attitudes can further be elaborated by noting that the extent of fit between needs and supplies (between work values and their corresponding rewards

received during or after successful performance) influences perceptions of need fulfillment (which work values serve by nature). Then, favorable perceptions of need fulfillment affect attitudes positively, leading to new episodes of higher job performance. In support of this effect of need fulfillment on attitudes, Cable and Edwards (2004) examined the relationship between value congruence, psychological needs fulfillment, and work attitudes. Their findings confirmed that value congruence and psychological needs fulfillment contribute independently to significantly predicting attitudes. This finding clarified that P-E similarity and needs-supplies fit are fit-based forms through which work values influence attitudes independently.

In regards to value congruence, employees who share similar values with the organization are expected to be successful and happy (Chatman, 1989; Schleicher et al., 2011). In regards to needs-supplies fit, Cable and Edwards (2004) discussed that individuals work at organizations to attain desirable rewards, and consequently, their work attitudes are expected to reflect the degree to which their desires were fulfilled as planned through the job. This fulfillment of employees' desired work outcomes can determine employees' degree of job satisfaction (Cable & DeRue, 2002).

Cable and DeRue (2002) note that employees may attain job rewards (needs-supplies fit) even if there is a low level of P-E similarity (work value

congruence) because needs-supplies fit should depend on successful job performance and less on the similarity between individuals and their workplace. Finally, researchers have also hypothesized that different types of fit may link differently to outcomes. For instance, positive organizational outcomes (e.g., job performance) may be more influenced by abilities-demands fit, while job and career-focused outcomes (e.g., job satisfaction, career satisfaction) may be more influenced by needs-supplies fit (Cable & DeRue, 2002; Su et al., 2015).

b. Theory of Work Adjustment (Through Attitudes)

Needs and values have rarely been central elements of psychological theories (Rounds & Leuty, 2020). That makes TWA one of the limited work-related theories where work values and needs are explicitly integrated as theoretical cornerstones. Like Holland's theory of personality types and work environments, TWA is considered a model of P-E fit (Swanson & Schneider, 2020). TWA conceptualizes work as an interaction between the individual and the environment (Dawis & Lofquist, 1984). The organization requires the completion of specific tasks and asks individuals with the appropriate qualifications to perform them. Individuals seek rewards and expect the organization to provide them in exchange for their work. When an individual's abilities and skills match those required by the organization, this match contributes to satisfactoriness as perceived by the

organization. When organizational rewards fulfill an individual's needs and work values, that leads to satisfaction as perceived by individual.

Both satisfactoriness and satisfaction describe the correspondence between the individual and the organization and are predictors of job tenure. The organization can decide to retain or fire the individual based on their level of satisfactoriness. Similarly, the individual can decide to stay at the job or quit based on their level of satisfaction. The correspondence is maintained as long as individuals and organizations meet each other's requirements. Work adjustment describes the adaptation to expectations of both individuals' rewards and organizations' work requirements to achieve correspondence and keep their reciprocal interaction ongoing.

In this way, the general correspondence between employees' work values and those of the workplace is expected to lead to satisfaction (i.e., job satisfaction). TWA describes the positive outcomes of job satisfaction related to the employee and successful job performance related to the organization as what keeps the relationship reciprocal going where requirements of both parties are met. The attitude of job satisfaction has been extensively discussed as a predictor of job performance, in line with the saying: "a happy worker is a productive worker." Judge et al. (2001) examined the relationship between job satisfaction and job performance by conducting a meta-analysis and found a significant relationship

between them ($r = .30$). They proposed different ways to explain the relationship between them, including that job satisfaction could be affecting job performance or vice versa. Accordingly, the effect of work values congruence on job performance can be conceptualized as mediated by job satisfaction.

However, it is worth noting that previous studies have found that job satisfaction relates more to contextual job performance (OCB) than to task performance. In previous research, job satisfaction has been a significant predictor of contextual performance (Islam et al., 2014; Kaur et al., 2015; Zeinabadi, 2010). Furthermore, Organ and Ryan's (1995) meta-analysis of the relationship between attitudes and contextual performance suggested that attitudes are a robust predictor of contextual performance and these researchers concluded that the relationship between job satisfaction and contextual performance is stronger than the relationship between job satisfaction and task performance. Based on that, we may expect happier employees to be more motivated to perform extra-role tasks.

c. Self-Determination Theory (Through Need Fulfillment)

Deci and Ryan's Self-Determination Theory (SDT) has been one of the most influential theories in linking human motivation to improved performance and well-being (Deci et al., 2017). SDT stipulates that three fundamental psychological needs are universal, and their satisfaction leads to the optimal functioning of individuals in life. These three psychological needs are autonomy, competence, and

relatedness. SDT proposes that individual differences and workplace contexts influence the satisfaction or frustration of these basic psychological needs. The satisfaction of these needs results in improved job performance and well-being, as mediated by motivations (intrinsic and extrinsic). In this way, basic psychological needs satisfaction increases individual motivation, resulting in improved job performance. Previous findings have supported that basic need satisfaction predicts job performance in the workplace (e.g., Baard et al., 2004).

Work values can be mapped onto SDT in two ways. First, as Furnham et al. (2021) suggested, work values taxonomies can focus on categorizing work values into intrinsic and extrinsic factors. This motivationally oriented classification of work rewards into intrinsic versus extrinsic can be linked to the motivation (intrinsic and extrinsic) mediator in SDT leading to job performance. In this way, work values can be visualized as motivational factors affecting job performance. Second, some work values can be mapped explicitly onto the three basic psychological needs where satisfying these work values would fulfill their underpinning needs. For instance, according to TWA's work values taxonomy, independence work values could be mapped to the autonomy need, achievement and recognition work values could reflect the competence need, and the relationships work values could be mapped to the relatedness need. Arguably, the working conditions and support work values can also be partially mapped to fulfilling the three basic psychological needs. Accordingly, satisfying these work

values can positively influence motivation, leading to further improvement in job performance.

d. Job Characteristics Model (Through Need Fulfillment)

Another perspective that can be useful in examining work values' relation to job performance is job design theories. Job design focuses on the characteristics of jobs and what they offer to individuals. So, job design offers an opportunity for aligning the rewards offered by the job and those valued by the employee. One of the most influential models of job design is the Job Characteristics Model (JCM; Hackman & Oldham, 1980). JCM proposes that jobs can be described in terms of five primary dimensions: (a) skill variety (the extent to which jobs allow individuals to use various skills), (b) task identity (the extent to which jobs allow individuals to perform tasks from the beginning to end), (c) task significance (the degree to which the job impacts others' lives positively), (d) autonomy (the extent to which the job allows individuals to decide how to do the job), and (e) feedback (the degree to which the job facilitates receiving feedback about one's performance).

JCM proposes that these five main job characteristics can lead to experiencing critical psychological states, such as the meaningfulness of the work, responsibility for the outcome of the work, and knowledge of the actual results of the work. Experiencing these positive psychological states predicts essential

personal and work outcomes, including high internal motivation, high-quality job performance, high job satisfaction, and low absenteeism and turnover. In this way, job characteristics influence critical psychological states, resulting in improved job performance.

Later developments to JCM and the research on job design have included identifying additional categories of job characteristics, such as motivational (e.g., job complexity), social (interpersonal job aspects), and contextual job characteristics (physical and environmental job aspects; Morgeson & Campion, 2003). In a meta-analysis, these motivational, social, and contextual job characteristics were predictors of various outcomes, including job performance (Humphrey et al., 2007).

Mapping work values onto job characteristics could be relatively straightforward. For example, the work value factors of work conditions and relationships can be aligned with the contextual and social job characteristics, respectively. Work value facets can be matched with either JCM's dimensions or the expanded job design characteristics (e.g., the work value of variety aligns with the task variety job characteristic in JCM). Similarly, Deci et al. (2017) have noted that job design research, specifically JCM, can be aligned with SDT's basic psychological needs. They discussed how these characteristics could be viewed as predictors of specific needs satisfaction. For instance, autonomy and task identity

would be related to the autonomy need, feedback would be related to the competence need, and task significance would be related to the autonomy and relatedness needs. This integration between job characteristics and SDT has been supported in a recent study where the results indicated that job characteristics positively influenced basic psychological needs satisfaction, which positively affected intrinsic motivation and negatively affected extrinsic motivation (Liu et al., 2022).

Based on this discussed alignment between job characteristics and SDT, we can expect that jobs that offer certain characteristics (i.e., rewards) would fulfill work values corresponding to these characteristics. This would then result in satisfaction of the underlying critical psychological states (based on JCM) and their associated basic psychological needs (based on SDT), leading to increasing motivation and improved performance.

B) *Effect Through Cognitive-Affective Processes*

Some researchers have proposed alternative mediating mechanisms for the relationship between value congruence and contextual performance (i.e., alternatives to attitudes). For instance, Resick et al. (2013) have developed a model based on the Cognitive-Affective Personality System theory (CAPS; Mischel & Shoda, 1995) to explain how person-organization fit (i.e., work value congruence) is linked to OCB.

As presented in Figure 8, the model proposes that perceptions of person-organization fit (P-O fit) form following an encoding process of matching organizational features to the personal fit schema to determine the degree of fit with the organization. This perception of P-O fit activates four cognitive-affective processes of integrating organizational membership into the individual's social identity, experiencing positive affective states, forming goal strivings related to increasing organizational success, and shaping expectations regarding the extent to which personal efforts could contribute to organizational success. These four processes are expected to act as a motivational force to direct individuals to engage in performing contextual tasks. With this, the relationship between P-O fit perception (i.e., work value congruence) and contextual performance is mediated by these four cognitive-affective processes. In addition, Resick et al. (2013) proposed that self-regulation processes play a role in increasing or decreasing goal striving and P-O fit perceptions based on self-observations of the contextual performance outcomes and consequent self-evaluations of P-O fit. Although these four proposed mediators include two goal-related constructs discussed earlier (expectancies and striving), they introduce the two unique factors of social identity and affect. These additional factors can further explain the relationship between value congruence and job performance.

Figure 8

Proposed Model of the Cognitive and Affective Motivational Processes Linking P-O Fit to Citizenship Performance. (Reproduced with permission; Resick et al., 2013, p. 103).
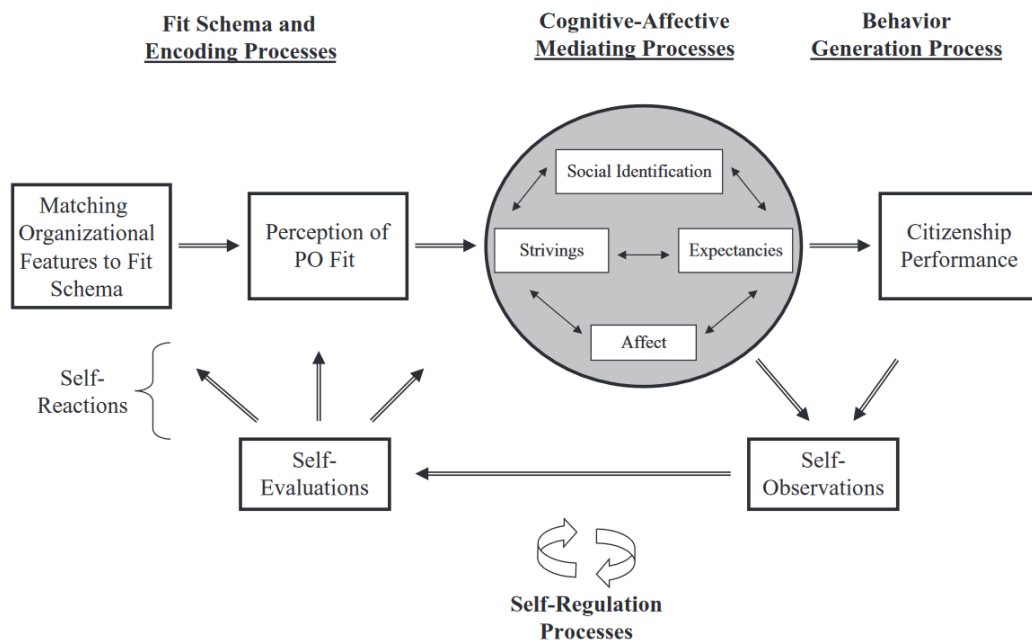
C) *Effect Through Social and Organizational Factors*

Cable and Edwards's (2004) examination of the relationships between value congruence, psychological needs fulfillment, and attitudes suggested that value congruence had a more significant direct effect on attitudes than its indirect effect through psychological needs fulfillment. This finding encouraged them to think

about other mediators that could help explain the relationship between work value congruence and work attitudes. Based on examining the literature, they proposed that the four following constructs mediate the relationship between work value congruence and valuable work outcomes: communication, predictability, attraction, and trust (J. R. Edwards & Cable, 2009).

First, concerning communication, they discussed that value congruence should promote communication because when individuals place equal importance on workplace outcomes, this can facilitate their communication and act as a frame for describing and interpreting work events. Second, concerning predictability, when employees share work values, this acts as a standard reference for them to guide their actions and respond to work events in similar ways, which allows individuals to predict how others and the organization may take action or react to certain events based on their mutual set of values, leading to enhanced predictability. Third, as for attraction, employees who share similar work values are more likely to have harmonious relationships where they place equal importance on what should be pursued, reducing the potential for interpersonal conflict. Fourth, when individuals' work values are congruent with their organization, this can enhance their trust towards the organization based on beliefs that their alignment with the organization means they will not be harmed by their organization as they share and adhere to similar beliefs about what is considered right and wrong (J. R. Edwards & Cable, 2009).

This study (J. R. Edwards & Cable, 2009) controlled for psychological needs fulfillment and found significant effects of these mediators on work attitudes (job satisfaction, organizational identification, and intent to stay). Specifically, trust had the largest effect, followed by communication and attraction. This finding emphasized that trust was the most supported explanation for the relationship between work values congruence and attitudes in this study. They concluded by noting that although their study focused on attitudes as a dependent variable, future research could examine if these mediators generalize to other outcomes such as job performance and other organizational behaviors. Accordingly, it seems that this can be an ongoing area of research of examining additional potential mediators of the relationship between work values and job performance.

D) Effect Through Job Stressors

Finally, Arthur et al. (2006) have suggested that another explanation for the relationship between P-O fit (work values congruence) and job performance could be the reduction of job stressors. This proposition suggests that higher value congruence decreases job stressors, such as role ambiguity and role conflict (Parkington & Schneider, 1979), leading to improved job performance (Tubre & Collins, 2000). This notion posits reduction in stressors as a potentially viable mediator in explaining the effect of value congruence on job performance. Future research is needed to test the validity of this suggested mediator.

In the end, although the previous discussion attempted to connect various separate dots found in the literature to help explain how work values could predict job performance, future research needs to more explicitly integrate work values into theories and models of job performance.

2.3.2 Previous Studies

Research examining the relationship between work values and performance outcomes has been relatively limited compared to other individual differences in organizational sciences. Still, previous studies support the significant relationship between work values and different aspects of job performance (Blickle et al., 2011; De Gieter & Hofmans, 2015; Huang et al., 2012; Jalalkamali et al., 2016; Lin et al., 2015; Merriman, 2017; Takase et al., 2005). Although the work values from these studies can be grouped into the six work value factors identified by TWA's taxonomy, the exact names of the work values found in previous studies have often differed slightly from one study to another.

For instance, previous studies have found the following work values are positively related to job performance: utilitarian orientation (Y. Lin et al., 2015), cognitive, instrumental, social, prestige (Jalalkamali et al., 2016), individual extrinsic value orientation (Merriman, 2017), getting ahead and getting along (Blickle et al., 2011), pay, reward with recognition, career advancement opportunities, development of own methods of work, intellectual stimulation, use

of knowledge, organizational support, job security, and working for respectable superiors (Takase et al., 2005), interpersonal ethic values (Huang et al., 2012), and long-term development (Y. Lin et al., 2015).

However, some findings have been more mixed. Earlier studies showed mixed results concerning the effect of work values on overall job performance. In 1986, Orpen conducted a correlational study on 180 employees of a large manufacturing company in the electronics industry. This study found that work values, represented by the Protestant Work Ethic (i.e., pride in work, attitude towards earnings, upward striving, job involvement, activity preferences, and social status of job), were not significantly related to job performance ($r = .11, .06, p > .05$, for two samples studied). In contrast, Darden et al. (1989) employed a sample of 261 retail salespersons and found a significant correlation of .19 ($p < .01$) between work values, represented by job or work-specific values and work-environment related values, and self-reported job performance. In another example, Shapira and Griffith (1990) administered the Survey of Work Values (Wollack et al., 1971), which measures the six Protestant Work Ethic values of pride in work, attitude towards earnings, upward striving, job involvement, activity preference, and social status of the job, to an electronics manufacturing sample. Results showed a strong positive effect of work values on job performance ($R^2 = .42$) for engineers and managers, where the intrinsic values of activity preference and pride in work were most important. However, for the production and clerical workers, the

157

effect of work values on job performance was lower ($R^2 = .15$), where extrinsic values were most important (status and attitudes towards earning).

It is also important to note that, in addition to examining overall performance, previous studies have investigated more specific types of job performance, namely task performance and contextual performance. However, almost no studies on the relationship between work values and counterproductive work behaviors (CWB) were found. The only exception was one study that found a negative relationship between work value congruence and CWB ($\beta = -.16$; Bouzari et al., 2020). This lack of research on the relationship between work values and CWB mirrors the same issue encountered in a previous meta-analysis, where researchers also noted the absence of studies examining vocational interests and CWB (Van Iddekinge et al., 2011).

Work Values Predicting Task Performance

It is vital for the individual employee and the organization at large to pay special attention to how organizational members can complete the specific tasks and roles they are assigned. Task or in-role performance can be thought of as those behaviors that are a part of the formal job position (Riketta, 2002). Furthermore, task performance is essentially an evaluation of specific work-related behaviors and activities outlined as an explicit part of the role and those that contribute to explicit organizational processes (Campbell, 1990; Riketta, 2002). Several studies have

focused on understanding the relationship between work values and role-specific performance.

For example, Takase et al. (2005) found that nurses' work values, as represented by pay, reward with recognition, career advancement opportunities development of own methods, intellectual stimulation and use of knowledge, organizational support, job security, and working for respectable superiors, were significant predictors of task job performance ($b = .33$). In addition, Y. Lin et al. (2015) examined the relationship between the work values of utilitarian orientation and long-term orientation and supervisor-rated in-role performance of 208 Chinese millennials from three business enterprises. Utilitarian orientation refers to an individual value of material rewards, essentially a high extrinsic preference. Results indicated a significantly positive relationship of utilitarian orientation with in-role performance ($r = .16$), while long-term orientation's relationship with in-role performance not significant. Further analysis results revealed that utilitarian orientation also significantly predicted in-role task performance and extra-role performance above and beyond gender, tenure, and age.

In comparison, a study conducted by De Gieter and Hofmans (2015) examined the relationship between work values and task performance in a sample of 179 employees from a large Belgian financial institute, and they found different results. Specifically, the work values of financial security, recognition and

159

interpersonal contact were examined along with supervisor-rated task performance. Of these work values, only financial security was significantly related to task performance; however, the relationship was negative ($r = -.21$). Financial security refers to the individual value of being able to receive the necessary resources from one's work in order to live as one pleases (De Gieter & Hofmans, 2015). Compared to the findings from Y. Lin et al. (2015), the relationship between extrinsic-related work values and performance outcomes could also be related to deeper cultural differences and other factors.

Finally, a study by Jalalkamali et al. (2016) used data from self-report surveys of 1,000 employees at two large International Joint Venture automobile corporations in Iran. They examined the relationship between employee work values and supervisor-rated task performance. The findings from this study demonstrated that cognitive, instrumental, social, and prestige work values positively related to higher task performance. Cognitive work values are intrinsic-oriented values that relate to and satisfy an individual's need for mental stimulation and psychological rewards. Instrumental work values are extrinsic-oriented values that encompass the job's material resources (e.g., salary and benefits). Social work values refer to an individual's aim to have meaningful and positive interpersonal/social interaction at work. Prestige work values refer to an individual's desire for power and notoriety within his or her work (Lyons et al., 2010; Ros et al., 1999). The findings from this study further show the importance

of work values in understanding performance and potentially demonstrate differences in the effect of work values on performance in non-western samples.

Work Values Predicting Contextual Performance

Although task performance is often operationalized as the core of job performance, findings from the examination of contextual or extra-role performance indicate the great value in understanding the practices and behaviors of individual employees who contribute to organizational performance outside of pure job descriptions (Werner, 2000). Contextual or extra-role job performance can be thought of as behaviors a job incumbent engages in that are outside of their formal job description but contribute to the social and motivational environment of the organization (Werner, 2000). Some studies have found work values predict contextual performance more than task performance. For instance, the study by Jalalkamali et al. (2016) demonstrated larger positive relationships between cognitive and instrumental work values and contextual performance compared to task performance.

In addition, Krumm et al. (2013) found that the work values of intrinsic growth, generativity, extrinsic growth, and context-related values (e.g., job security) were positively related to the OCB behavior of helping with correlations of .25, .21, .12, and .09, respectively. These were also positively related to the OCB behavior of taking initiative with correlations of .31, .21, .18, and .02 respectively

(the last correlation was the only non-significant relationship). Furthermore, Yucel (2008) also found positive significant relationships between OCB and the work values of self-development (.33), recognition (.33), friendly relations (.18), autonomy (.14), and being influential (.15).

Finally, in Lin et al.'s (2015) study, utilitarian orientation was also shown to significantly predict extra-role performance ($r = .12$), whereas long-term orientation was not a significant predictor of extra-role performance.

2.3.3 Relationship Estimate

The discussed examples of previous studies seem to provide an inconsistent picture of the relationship between work values and job performance. In some studies, the relationships were positive with moderate magnitude, while in others, no significant relationships were observed. These findings contribute to an unclear understanding of this relationship and its magnitude, requiring a meta-analysis to systematically estimate direction and magnitude. As was noted before, the research evidence on work values' validity in predicting job performance is limited and has been summarized only in the realm of P-E fit operationalizations of work values (J.-I. C. Hansen & Wiernik, 2017). Fortunately, these few meta-analytic studies that have linked work values to job performance in the form of P-E fit can help us get an initial sense of the seemingly inconsistent results found in previous primary studies on this relationship.

First, Kristof-Brown et al. (2005) examined the relationship between person-job fit (needs-supplies fit) and overall job performance in 8 studies ($N =$ 1,558). Their estimate of the relationship was .20 (80% credibility intervals: .14, .25). Second, Arthur et al. (2006) examined the relationship between person-organization fit (values congruence) and overall job performance in 15 studies ($N =$ 2,098). Their estimate of the relationship was .14 (80% credibility intervals: -.04, .32). Third, Hoffman and Woehr (2006) examined the relationship between person-organization fit (values congruence) and both task performance and contextual performance. As for task performance, based on 25 studies ($N = 7{,}179$), their estimate of the relationship was .26 (80% credibility intervals: .09, .43). As for contextual performance, based on 9 studies ($N = 1{,}258$), their estimate of the relationship was .25 (80% credibility intervals: .17, .33).

These initial estimates for the relationship between work values fit and job performance range between .14 and .26. However, their generalizability to our focus is unclear given the limited scope of these investigations, as they did not examine the literature for work values specifically. In the next section, we will dive deeper into the hypotheses and research questions developed for the current study to examine the relationship between work values and job performance.

Chapter 3
Hypothesis Development

For the current research, we will examine job performance according to Motowildo et al.'s (1997) theory that distinguished between task and contextual performance. This decision was partly driven by the absence of work value studies that examined additional types of performance, especially CWB. Our adoption of the task versus contextual performance framework was also encouraged by its use in previous meta-analyses that examined work values and job performance (Arthur et al., 2006; Hoffman & Woehr, 2006). In addition, given the different measurement methods of job performance, we will examine performance as subjective or objective.

Concerning work values, we will examine them using TWA's taxonomy. Both operationalization types for work values will be examined (independent work values and work value congruency). Also, we will examine the type of work value congruency (congruency with organization, supervisor, team, or occupation). In addition, we will examine the nature of work value congruency, as subjective, objective, or perceived, similar to previous meta-analyses (Kristof-Brown et al., 2005).

However, in examining the work value congruency with occupational rewards, we make an important distinction between expected occupational rewards and experienced occupational rewards. The congruency between an individual's work values and the expected rewards of a given job is considered P-E similarity fit, or in other words, work value congruency with the occupation (e.g., fit between work values and O*NET's OVPs). This supplementary fit is expected to be helpful in making selection-related decisions, and therefore it will be examined in our study.

On the other hand, the congruency between an individual's work values and the experienced rewards of a given job is considered a form of needs-supplies fit (i.e., based on post-employment perceptions of how much an occupation/job has actually fulfilled an individual's needs). This form of complementary fit will be excluded from this study for three reasons. First, our study focuses on examining work values' criterion-related validity in predicting performance. This focus does not match the nature of the needs-supplies fit, where this type of fit is typically assessed after having received the rewards. Thus, by maintaining our focus on work values and their congruency (supplementary fit), we are more suited to answer the central question of how beliefs of work outcomes' importance (work values), in their independent form or as shared with the environment, predict future performance. Second, an attempt to identify studies on the APA PsycInfo database examining need fulfillment and job performance has indicated that most of the

results were irrelevant to our focus. Most search results involved studies incorporating need fulfillment measures focused on assessing basic psychological needs as related to SDT, which directs the focus away from examining work values specifically and limits the data to the three primary basic psychological needs of SDT. Third, as noted by Cable and Edwards (2004, p. 823), research on need fulfillment characterizes needs/values in the form of a desirable "amount" of an attribute (e.g., how much of a specific need is met by work-related outcomes) compared to research on values that characterize needs/values in the form of the "importance" of an attribute (e.g., how important a specific need is for the employee). This difference further indicates that needs-supplies fit is not suitable for the scope of our study, as examining the consequences of satisfying work values or needs can be suggested to be the focus of a separate study.

Finally, additional moderators are also considered for the current study, including publication status (published versus unpublished) and study design (cross-sectional versus longitudinal). The following section will focus on the research questions or hypotheses developed based on the previous variable considerations.

Hypothesis 1

This study will first examine the direction of the relationship between work values and job performance. Based on the potential mechanisms discussed regarding how work values can predict job performance (e.g., by being a motivational factor), and in line with many of the results shown in previous studies, we first hypothesize that, at a general level, there will be a positive relationship between work values and job performance. Note that subsequent hypotheses/questions address specific aspects and operationalizations of work values and job performance in more detail; this initial hypothesis focuses on a high-level summary of these relationships overall.

Hypothesis 1: Work values will have a significant positive relationship with job performance.

Research Question 1

The current study also aims to answer a primary question related to estimating the magnitude of the relationship between work values and job performance. As discussed in our summary of examples from previous studies, prior results have not provided a clear indication of the magnitude of the relationship between work values and job performance. Therefore, we will address that as an exploratory question that will be answered through the results of our meta-analytic study.

Research Question 1: What is the magnitude of the relationship between work values and job performance?

Hypothesis 2

As noted, this study will also examine task performance and contextual performance separately. We expect that work values' relationship with contextual performance will be larger than their relationship with task performance. This hypothesis is driven by the theory of individual differences in task and contextual performance (Motowildo et al., 1997). This theory proposed that personality variables would tend to predict contextual performance, while cognitive abilities would tend to predict task performance. Given that work values have been conceptualized as part of individuals' personality structure (Rokeach, 1973; Ronen, 1978; Super, 1995), we hypothesize that their effect on contextual performance will be larger than their effect on task performance. Previous research has suggested that value fit was more related to contextual performance than overall and task performance (Van Vianen, 2018). However, we note that in Hoffman and Woehr's (2006) study, work value congruence had a comparable relationship with task and contextual performance.

Hypothesis 2: Work values will have a stronger relationship with contextual performance than task performance.

Hypothesis 3

When it comes to the method of assessment of job performance (subjective or objective), we expect that subjective performance will be more related to work values than objective performance. As discussed earlier, subjective performance can assess areas of individual performance more comprehensively, given the limitations of finding objective measures of performance (Murphy et al., 2018). When objective performance criteria are limited, they could be focusing on narrow or specific areas of job performance that are only relevant to, and can be predicted with, a limited number of work values. This limitation could attenuate the observed relationship between work values and objective performance given the exclusion of potential additional variance attributed to other work values related to a wider range of job behaviors. Based on this notion, we could expect that a higher number of work values can be related to behaviors assessed through subjective performance, leading to a stronger relationship as work values will account for more variance in subjective performance scores.

Hypothesis 3: Work values will have a stronger relationship with subjective performance than objective performance.

Hypothesis 4

In addition, we expect to see differences between the independent and congruence effects of work values on job performance. The main propositions of P-

E fit theories suggest that the interaction between the person and the environment should predict behavior better than either of them separately and that outcomes will be optimal when the person and the environment are congruent (Van Vianen, 2018). This suggests that work value congruence may affect job performance more than work values alone. As discussed earlier, value congruence involves an additional level of matching with the environment that can benefit both the individual and the organization. Therefore, we hypothesize that work value congruence will have a larger effect on job performance compared to work values alone. However, we note that there was evidence of contradictory findings in one previous study (Suar & Khuntia, 2010).

Hypothesis 4: Work value congruence will have a stronger relationship with job performance compared to independent work values.

Hypothesis 5

When we examine work value congruence more closely, we can expect to find differences in predicting job performance based on the assessment method for congruence. Specifically, we expect the direct assessment of fit (perceived fit) to associate with job performance more than the indirect assessment of fit (subjective and objective fit). Individuals' perceptions of overall fit could be more important to predicting their job performance than inferences based on measuring their work

values. This view is supported by Kristof-Brown et al.'s (2005) meta-analysis that found perceived fit has stronger effects in most cases than indirect fit measures.

Hypothesis 5: Perceived fit will have a stronger relationship with job performance compared to subjective or objective fit.

Hypothesis 6

Within indirect assessments of fit, we also expect to find differences in predicting job performance between subjective and objective fit. As discussed earlier, an individual's perception of the environment's values may matter more than objective assessment of the environment's values in influencing individual behavior (Finegan, 2000). For example, if an employee perceives the organization to value creativity, that perception will influence the employee's assessment of fit and related behaviors even if the organization does not objectively value creativity. Therefore, we hypothesize that the effect of subjective fit on job performance will be higher than objective fit.

Hypothesis 6: Subjective fit will have a stronger relationship with job performance compared to objective fit.

Research Question 2

The current study will also examine the focus of work value congruence. Specifically, congruence can involve fit with the organization, the supervisor, the

team, or the occupation/job. Depending on the availability of this detailed level of operationalizing work value congruence in relation to job performance, we will examine how these various work value operationalizations differ in their effect on job performance. Kristof-Brown et al.'s (2005) meta-analysis on the relationship between different types of fit and work outcomes indicated that person-organization fit was weakly related to overall job performance; however, person-supervisor fit, person-group fit, and person-job fit were more strongly related to job performance. Given that we do not have a specific rationale for proposing varying effects across different fit operationalizations, we will examine this using an exploratory approach.

Research Question 2: What is the relationship between different work value fit operationalizations and job performance?

Hypothesis 7

As noted, the TWA taxonomy involving six work values will be used to organize results in this study. The six work value factors can be expected to differ in their relationships to different aspects of job performance. We hypothesize that the work value factors involving characteristics encountered as part of performing tasks will be more related to task performance. This includes the factors of achievement, independence, relationships, and working conditions. On the other hand, we hypothesize that work value factors involving characteristics related to the

individual's relationship with the organization will be more related to contextual performance. This includes recognition and support.

We suggest the first set of relationships (with task performance) are likely because these four work values will guide employees toward task-focused improvements in performance. In addition, the second set of relationships (with contextual performance) are likely due to potential connections with perceived organizational support (POS). Employees' perceptions of organizational support are defined as "global beliefs concerning the extent to which the organization values their contributions and cares about their well-being" (Eisenberger et al., 1986, p. 501). We expect employees who receive rewards that are more organization-oriented than job-oriented to feel obliged to reciprocate by benefiting the organization through contextual performance. Jawahar and Carr's (2007) study supported the positive relationship between POS and contextual performance. Furthermore, the relationship between POS and contextual performance was found to be stronger than the relationship between POS and task performance (Muse & Stamper, 2007).

Hypothesis 7: (a) The work values of achievement, independence, relationships, and working conditions will have a stronger relationship with task performance than contextual performance. (b) The work values of recognition and

173

support will have a stronger relationship with contextual performance than task

performance.

Hypothesis 8

In line with our previous discussion on work value congruency with the

occupation, we hypothesize that job relevance can moderate the relationship

between work values and job performance. The more theoretically relevant a work

value is in terms of being rewarded through a given job, the higher the expected

relationship between that value and job performance. This can be examined by

using O*NET's Occupational Value Profiles (OVPs) involving the six-factor work

values as predictors of criterion-related validities for each work value separately.

Therefore, we expect that as work values become more relevant for a job, their

relationship with job performance will be higher. This approach is similar to Van

Iddekinge et al.'s (2011) investigation of the effect of job relevancy on the interests-

performance relationship.

Hypothesis 8: The relationship between job relevance and validity will be

positive, where higher levels of relevance will be associated with higher validity

coefficients.

Hypothesis 9

Publication status will also be examined as a moderator. We expect that

published studies (e.g., journal articles) will show stronger relationships than

unpublished studies (e.g., theses and dissertations). Academic journals have traditionally shown a focus on publishing significant results. This has resulted in what is known as the file-drawer effect, or publication bias, where the statistical significance of a study's results influences the probability that it gets published (Scargle, 1999). Based on similar findings from previous meta-analyses (e.g., Van Iddekinge et al., 2011), we hypothesize that published results will be associated with a larger relationship.

Hypothesis 9: The relationship between work values and job performance will be stronger for published studies than for unpublished studies.

Hypothesis 10

Study design is another moderator that will be examined in the current study. We differentiate between cross-sectional studies, where values and performance are measured at approximately the same time, and longitudinal studies, where the measurement of values and performance is separated in time. In cross-sectional studies, there are not as many chances for other factors to affect job performance over time as there are in longitudinal studies. Therefore, we hypothesize that cross-sectional studies will show larger relationships compared to longitudinal studies. This hypothesis is in line with the expectation that time lags between measurements can decrease the observed correlations between predictors and criteria (Van Iddekinge & Ployhart, 2008). Also, this is similar to the

differentiation between concurrent designs (predictors and criteria are measured at the same time) and predictive designs (criteria are measured at a later time). Research has shown that concurrent designs tend to demonstrate stronger relationships than predictive designs (Gupta et al., 2013).

Hypothesis 10: The relationship between work values and job performance will be stronger for cross-sectional studies than for longitudinal studies.

Chapter 4
Methodology

In conducting our meta-analysis, we follow the recommendations and guidelines set by previous researchers, especially those developed by Schmidt and Hunter (2015). We also refer to the recent recommendations shared by Hansen et al. (2022), who offered a practical guide to conducting meta-analyses, summarizing recent advances in this area. Furthermore, we consult previous meta-analyses relevant to our topic for further guidance (Arthur et al., 2006; Hoffman & Woehr, 2006; Kristof-Brown et al., 2005; Nye et al., 2012, 2017; Van Iddekinge et al., 2011).

Literature Search

Based on the current literature review of work values, the focus we adopt in searching for studies of interest is built on the distinction between work values and life values. As the current study aims to explore the links between work values and job performance in the workplace context, a specification of work values is necessary to limit the results to values pertaining to the workplace. In searching for work values, we use a combination of the following terms: "work value" or "job value" or "occupational value" or "work orientation" or "job orientation" or "value congruence" or "value correspondence" or "value fit." In searching for job

performance, we use the following set of terms: "performance" or "OCB" or "OCBs" or "citizenship behavior" or "productivity."

Our information sources for searching the literature include the following ProQuest databases: APA PsycInfo, ABI/INFORM Collection, APA PsycArticles, Dissertation & Theses, Ebook Central, Publicly Available Content Database, Research Library, and STEM Database. In addition, the previous meta-analyses relevant to our topic are examined to identify additional studies (Arthur et al., 2006; Hoffman & Woehr, 2006). Furthermore, the references mentioned in the identified articles from the previous two steps are further examined for potentially adding other relevant studies. In conducting our search, we first search for the appearance of our keywords in article titles or abstracts, similar to the approach adopted by Van Iddekinge et al. (2011). This step is the first in shortlisting potential studies based on their relevancy. The exact keywords used in searching on ProQuest databases are presented in Appendix A. Next, the shortlisted studies are examined in more detail to confirm their content suitability for our meta-analysis.

In terms of the inclusion and exclusion criteria, only job performance measured at an individual level is included; performance criteria assessed at departmental or organizational levels are excluded. This decision is in line with our focus on the effect of work values on individual job performance. Also, only work-related job performance is included (e.g., excluding academic performance or

experimental studies). Moreover, only field studies based on organizational samples are included (studies examining academic performance or experimental studies linking work values to task performance are excluded). Also, studies that examined work values in terms of their centrality compared to other life value areas or the subjective value of work itself are excluded. The assessment of how work values compare to other value areas is incompatible with the scope of the current study. Furthermore, studies that examine or operationalize work values as life values, cultural values, organizational values, or work ethics are excluded. In addition, studies where full-text access is not available or where necessary statistics are not available are excluded, as we are not be able to use them for analysis. Finally, we include only original studies and each primary study is coded one time in our dataset (excluding duplicates).

Data Coding

The final list of identified articles is coded for their basic study information and the following moderators.

1. **Type of job performance**: task, contextual, unspecified (i.e., when performance is not reported with sufficient information to classify it, or if a mixture of task and contextual data is reported as a composite).

2. **Method of assessment of job performance**: subjective, objective.

3. **Type of work values**: independent, congruence.

4. **Method of assessment of congruence**: subjective, objective, perceived

5. **Operationalization of congruence**: organization, supervisor, group, job

6. **Publication status**: published, unpublished

7. **Study design**: cross-sectional, longitudinal

Furthermore, we take note of the following information in case it is needed for additional analyses: number of samples within each study, number of occupations in the sample, description of the occupation if one occupation was reported, level of work values (composite, factors, facets), work value measurement (ratings, ranking), source of performance information, whether the study was a validation study, and if used for selection purposes, whether they reported standard deviation (*SD*) for both the sample and the population to allow for the correction of range restriction (Van Iddekinge et al., 2011).

Finally, the work values identified in the final list of studies is categorized into TWA's taxonomy at the factor-level and at the facet-level whenever possible. This coding is done by two raters, and any discrepancies are resolved by discussion between the raters. To ensure the accuracy of the remaining coded variables, two

raters code a random sample of 15% of the examined studies, similar to Hoffman and Woehr (2006), and interrater agreement is examined accordingly.

Procedures

We chose correlation coefficients as the effect size measure most suitable for our meta-analytic study (Hansen et al., 2022). For other reported effect size statistics (e.g., *t*, *F*, *M*, and *SD*), we convert them to correlations using Schmidt and Hunter's (2015) formulae.

The observed correlations are corrected for measurement error in the criterion (reliability attenuation). This correction for operational validity uses reliability information reported in the original studies, and whenever this information is not reported, we refer to reliability estimates identified in previous meta-analyses (e.g., Conway & Huffcutt, 1997).

Finally, the correction for range restriction may not be feasible given that similar previous meta-analyses did not find any primary studies reporting *SD* values for both the sample and the population (Van Iddekinge et al., 2011). Note, however, that our expectation is that it is unlikely for us to find studies that measured work values as a part of an employee selection process, given the limited guidance on using work values as predictors for job performance in the literature. Therefore, this may be less of an issue for us as we examine the relationship between work values and job performance.

Analysis

Regarding choosing the meta-analytical method for our study, two main methods could be relevant to our research questions: traditional univariate meta-analysis and meta-regression (Hansen et al., 2022). Each method involves advantages and disadvantages. For example, univariate meta-analyses are suitable for identifying an overall direction of a relationship and estimating its weighted mean effect size. However, univariate meta-analyses are limited in how they allow researchers to interpret boundary conditions (i.e., moderators). To compensate for this limitation, studies create sub-groups based on the moderators and investigate the difference between these groups to examine the factors leading to effect size variation.

Furthermore, researchers have recommended using hierarchical subgrouping of studies to avoid correlated moderators' confounding effects (Schmidt, 2017). Hierarchical subgrouping involves sequentially breaking down (subgrouping) moderator groups until the breakdown is complete (Schmidt, 2017). This method was suggested to be superior to meta-regression when moderators are correlated (Schmidt, 2017).

In comparison, meta-regression uses a regression-based approach where the effect sizes act as the dependent variable, which is regressed on multiple moderators simultaneously, accounting for shared variance (Hansen et al., 2022).

Although meta-regression provides the advantage of investigating moderator effects simultaneously, this approach also has serious methodological limitations (Schmidt, 2017). Schmidt (2017) discussed nine statistical and measurement issues related to using meta-regression that can hinder their usefulness and the generalizability of their findings. One of the main problems with meta-regression is related to sample size requirements. For instance, it was stated that using eight predictors (i.e., moderators) requires a sample size of at least 150 studies (Schmidt, 2017), which is highly unlikely to be the case for our research given the relatively small number of studies found in previous relevant meta-analyses. Therefore, the current study follows the univariate meta-analysis method as it is more appropriate for studying our research topic.

Regarding the statistical software involved, we use the R package *psychmeta* (Dahlke & Wiernik, 2019). Hansen et al. (2022) discuss different commercial and open-source meta-analysis software options. However, one major advantage of *psychmeta* is that it focuses on psychometric meta-analysis, and it provides analysis features suitable for our study such as correction for measurement error.

Finally, this study aims to follow open-science practices, where the dataset and the code used for conducting the study are published online via an open-source repository. By publishing materials in a public repository such as OSF (see the

guide created by Soderberg, 2018), this study will facilitate the use of our dataset in

future meta-analytic studies.

Chapter 5
Results

Literature Search

The identification of potential studies for inclusion in the meta-analysis was based on three sources as discussed in the methodology section. First, the studies included in the previous P-O fit meta-analyses (Arthur et al., 2006; Hoffman & Woehr, 2006) were included in the initial list of studies. Second, studies found in online literature databases (see Appendix A for detailed searching strategy) were also included. Third, studies found in the citations of the previous two steps were also included. Following the recommended PRISMA approach of presenting the steps of identification, inclusion, and exclusion of studies in a flow diagram (Moher et al., 2010; Page et al., 2021), Figure 9 provides a summary of the steps leading to the identification of the final studies included in analysis. The steps taken led to the identification of 66 eligible studies for inclusion in the analysis. However, as will be described in detail later, one study was identified as an outlier, so its exclusion led to including 65 studies in the final analysis.

Studies that were screened based on titles and abstracts and found relevant to our study ($k = 185$) were assessed for further eligibility based on detailed examination of their content. There were 119 studies that were categorized as ineligible for analysis based on six exclusion criteria.

Figure 9

PRISMA Flow Diagram of the Current Meta-Analysis.
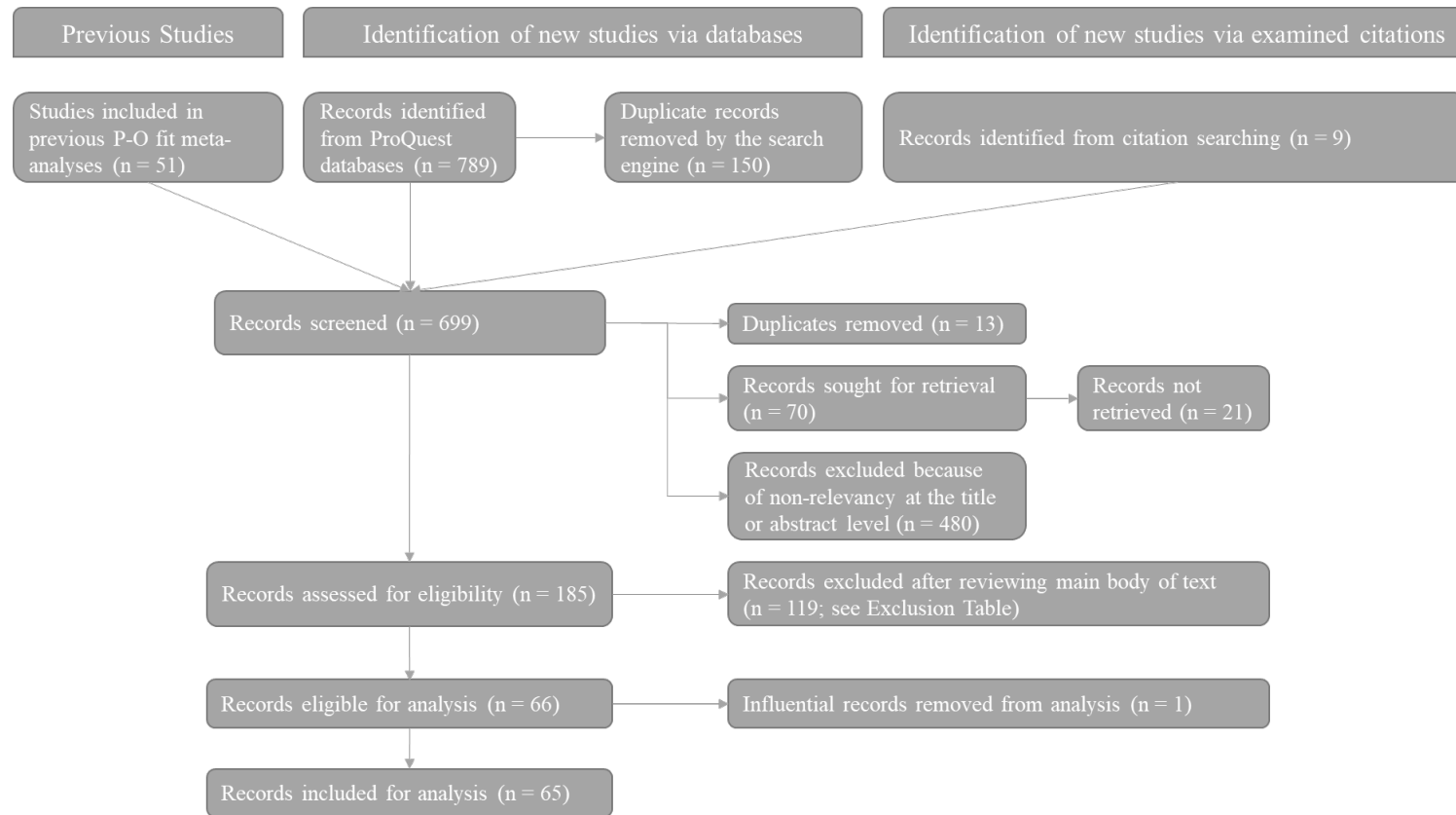
Table 6 summarizes the exclusion criteria along with the percentage of excluded studies according to each criterion. The top reason for exclusion was not having eligible work values measured (38.7%), followed by absence of individual-level job performance measurement (29.4%), and studies excluded for statistics and analysis-related purposes (20.2%).

Table 6

Number and Percentage of Excluded Studies by Inclusion Criterion

Outcome/inclusion criterion	k	%
Total studies identified for possible inclusion	185	
Studies that passed all inclusion criteria	66	35.7
Studies that did not pass one or more inclusion criteria	119	64.3
1) Not a primary study	**4**	**3.3**
2) No eligible work values measured	**46**	**38.7**
a) Cultural values	2	1.7
b) Life values	4	3.4
c) Organizational values	8	6.7
d) Work centrality	3	2.5
e) Work ethics	8	6.7

f) No measurement of work values	21	17.6
3) No individual job performance measured	**35**	**29.4**
4) Incompatible analysis level	**4**	**3.4**
5) Issues with reported statistics/analyses	**24**	**20.2**
a) Reported work values as part of composite	1	.8
b) No reporting of the relationship of interest	10	8.4
c) Missing needed statistics	12	10.1
d) Used extreme group comparison (potential inflated effect size where cases between the extremes are omitted)	1	.8
6) Unclear methods to determine if work values were assessed	**6**	**5**

Note. Percentages reflect the percent of excluded studies ($k = 119$) that were excluded due to each criterion.

The final list of the 65 studies identified for analysis is presented in Appendix B. This includes 52 published journal articles and 13 unpublished dissertations/theses. Some of these studies included multiple independent samples. For the purposes of the current research, these unique samples will be referred to as

separate studies. The studies examined included 77 samples (*k*) comprising 257 effect sizes and involving 22,681 participants (*N*).

Data Coding

The author along with another Ph.D. student in Industrial/Organizational Psychology independently coded all the work values information used in the current study, including matching the examined work values with O*NET's work values taxonomy, at both the factor-level and facet-level, whenever applicable. The percentage of times the two coders recorded the same value was used to assess the level of rater agreement (e.g., Van Iddekinge et al., 2011). This resulted in an agreement level of 95% of the cases. All discrepancies were resolved by discussion.

To assess the level of agreement regarding the remaining coded variables, an audit subset of 11 random studies (17% of the identified 65 studies) were also coded by a different Ph.D. student in Industrial/Organizational Psychology. This student coded all the information used for these studies, including the work values previously double-coded in the previous step. The coded information resulted in an agreement level of 94% of the cases. All the discrepancies were resolved by discussion.

Artifacts

The dataset used for analysis included all the effect sizes reported within the identified studies. All the effect sizes reported were correlation coefficients, so

189

there was no need to convert other results to correlation values. Before proceeding with the analyses, application of two artifact corrections for range restriction and measurement error (Schmidt & Hunter, 2015) were considered.

First, with regard to range restriction, the studies were examined for whether they were validation studies, and whether they reported *SD* of work values for the sample (restricted *SD*) and for the applicant pool (population/unrestricted *SD*). Given the limited guidance on using work values as a predictor of job performance in the literature, it was expected that few studies may include work values in an assessment battery or a validation study. This was confirmed in that only 5 validation studies were found out of the 65 identified studies. These 5 studies included 1 predictive validity study and 4 concurrent validity studies. In addition, none of the 65 studies, including the predictive validity study, reported both the restricted and unrestricted *SD* values.

Accordingly, the current meta-analysis study is based mostly on concurrent studies where work values and job performance were assessed for incumbents within organizations. Based on that, range restriction is not likely to be a major issue for our results. In concurrent studies, if range restriction is present, it is likely to be indirect and have a small magnitude (Sackett et al., 2021). Therefore, we follow the recommendation of Sackett et al. (2021) in not correcting for range restriction for concurrent studies.

Second, we considered correcting for measurement error in the criterion measure to obtain corrected operational validity estimates (Sackett et al., 2021). Most of the studies examined included criterion reliability information to be used for the correction. It is worth noting that when a study provided multiple reliability values, the higher one was recorded in the dataset to facilitate a conservative estimation of corrected validities. There were missing reliability values for objective performance measures in 6 studies, and for subjective performance measures in 7 studies.

For the current study, we have replaced these missing reliability values with conservative estimates for the purpose of measurement correction. For missing objective performance measure reliabilities, we have used the reliability of 1.0, therefore treating them as perfect measures of objective performance (e.g., Nye et al., 2012). For missing subjective performance measure reliabilities, we used the meta-analytical estimate of .60 found in Conway and Huffcutt (1997), similar to the approach used in previous studies (e.g., Nye et al., 2012, 2017; Sackett et al., 2021). After that, the measurement correction for operational validity was conducted for each individual study. This was conducted as part of the meta-analysis by using *psycmeta* and following the Hunter and Schmidt meta-analytic approach.

Finally, when any study reported multiple correlations, these multiple effect sizes within the study were consolidated by forming a composite using the recommended approach within the *psycmeta* package. This aims at removing dependency among samples, and it is an alternative to the averaging approach used in previous studies.

Outliers

Before exploring the results of the meta-analysis, we followed two approaches to identify outliers or influential studies in our initial dataset (66 studies). First, similar to Van Iddekinge et al. (2011), and based on a modified version of the sample adjusted meta-analytic deviancy (SAMD) approach (Beal et al., 2002; Huffcutt & Arthur, 1995), a study was considered influential in the meta-analysis results if its exclusion changes the overall corrected validity estimate by 20% or more. A leave-one-out analysis was examined using *psycmeta,* where meta-analyses are computed leaving out one study at a time to show what the estimate would be without each of the studies. When the meta-analysis was first computed using the initial dataset of 66 studies, the overall corrected validity was .261. Following the 20% approach, a study would be influential if its exclusion would make the corrected validity less than .209 or more than .313. The leave-one-out analysis showed that the highest change that an exclusion of a study would lead to is an estimate of .228 (12.8% reduction from .261). Accordingly, based on this result, no studies were excluded.

Second, using the *metafor* package for R (Viechtbauer, 2010), an influence

function was used to calculate the following leave-one-out diagnostics for each

case: externally standardized residual, DFFITS value, Cook's distance, covariance

ratio, the leave-one-out amount of (residual) heterogeneity, the leave-one-out test

statistic of the test for (residual) heterogeneity, and DFBETAS value(s). This

analysis provides a graph of the involved analyses applied to all effect sizes

examined and it highlights the effect size observations that are identified as

influential (see Appendix C). The results of this analysis showed that multiple

observations of one study (Y. Chen et al., 2016) and one effect size—out of

many—reported in another study (Jalalkamali et al., 2016) were identified as

influential. Based on this result, the identified study (Y. Chen et al., 2016) was

excluded from analysis, along with the identified effect size from Jalalkamali et al.

(2016). This resulted in the final dataset involving 65 studies (77 samples) that

were used for the following analyses.

Power

In addition, given that this is the first meta-analysis to our knowledge on the

relationship between work values and job performance, a retrospective power

analysis was conducted using the *metapower* package in R (J. W. Griffin, 2020).

The results of this analysis indicate that the power provided by the current study is

equal to 1.0. Given the high sample size reported in the current study, this level of

power is similar to many previous meta-analyses of extremely large sample sizes reported in the organizational literature (Paterson et al., 2016).

Overall Results

The results for the meta-analysis conducted using *psycmeta* are presented in Table 7. As can be seen, for the 77 studies examined (i.e., unique samples), the overall estimate (with no moderators) of the sample size-adjusted mean of uncorrected validity is .23 and the corrected validity is .26. This is associated with a standard deviation of corrected validity (SD_{rc}) of .22, 95% confidence interval (CI) bounds of .21 and .31, and 80% credibility interval (CR) bounds of -.01 and .53.

Table 7

Results of Meta-Analyses for All Studies.

Moderator	Moderator Level	k	N	$\bar{r}$	SD_r	SD_{res}	$\bar{\rho}$	SD_{r_c}	SD_ρ	95% CI	80% CR
Overall Estimate		77	22 681	.23	.19	.19	.26	.22	.21	[.21, .31]	[−.01, .53]
WV Measurement	Rating	69	21 318	.25	.19	.18	.28	.21	.20	[.23, .33]	[.03, .54]
	Ranking	11	2 137	.01	.08	.02	.01	.08	.02	[−.05, .06]	[−.02, .04]
WV Type	Independent	32	10 152	.19	.19	.18	.22	.22	.22	[.14, .30]	[−.06, .50]
	Congruence	48	13 016	.26	.19	.19	.28	.21	.20	[.22, .34]	[.02, .54]
Congruence Operationalization	Organization	35	10 567	.28	.19	.18	.31	.21	.20	[.23, .38]	[.04, .57]
	Supervisor	12	2 725	.16	.17	.16	.18	.18	.17	[.06, .30]	[−.05, .41]

Moderator	Moderator Level	k	N	$\bar{r}$	SD_r	SD_{res}	$\bar{\rho}$	SD_{r_c}	SD_ρ	95% CI	80% CR
	Group	4	419	.16	.18	.15	.19	.19	.15	[−.11, .49]	[−.06, .45]
	Job	1	104	.35	—	—	.38	—	—	[.20, .57]	[—, —]
Congruence Category	Direct (Perceived)	35	11 035	.31	.17	.16	.34	.18	.18	[.27, .40]	[.11, .56]
	Indirect (Objective, Subjective)	16	2 369	.00	.10	.06	.00	.11	.06	[−.06, .06]	[−.08, .09]
Congruence Assessment	Perceived	35	11 035	.31	.17	.16	.34	.18	.18	[.27, .40]	[.11, .56]
	Subjective	4	656	−.05	.15	.13	−.06	.17	.14	[−.33, .20]	[−.30, .17]
	Objective	13	1 981	−.00	.09	.04	.00	.10	.04	[−.06, .06]	[−.05, .06]

Moderator	Moderator Level	k	N	$\bar{r}$	SD_r	SD_{res}	$\bar{\rho}$	SD_{r_c}	SD_ρ	95% CI	80% CR
JP Type	Task	43	11 145	.18	.20	.19	.20	.21	.20	[.13, .27]	[−.07, .46]
	Contextual	32	10 658	.34	.17	.16	.37	.19	.18	[.30, .44]	[.13, .61]
	Unspecified	17	5 606	.15	.12	.11	.18	.15	.14	[.10, .26]	[−.00, .36]
JP Assessment	Subjective	74	22 074	.24	.19	.18	.27	.21	.20	[.22, .32]	[.01, .53]
	Objective	6	933	.02	.15	.13	.02	.15	.13	[−.14, .18]	[−.17, .21]
JP Source	Supervisor	44	11 264	.14	.15	.13	.16	.17	.15	[.11, .21]	[−.04, .36]
	Self	34	11 246	.33	.19	.18	.37	.21	.20	[.30, .44]	[.11, .63]
	Peer	1	89	.29	—	—	.30	—	—	[.10, .50]	[—, —]
	Organization	6	933	.02	.15	.13	.02	.15	.13	[−.14, .18]	[−.17, .21]

Moderator	Moderator Level	k	N	$\bar{r}$	SD_r	SD_{res}	$\bar{\rho}$	SD_{r_c}	SD_ρ	95% CI	80% CR
Task-JP Source	Other-Reported	35	7 241	.11	.16	.15	.12	.18	.16	[.06, .18]	[−.09, .33]
	Self-Reported	10	4 161	.31	.20	.19	.33	.22	.21	[.18, .49]	[.04, .62]
Study Type	Cross-sectional	63	19 307	.26	.20	.19	.29	.22	.21	[.24, .34]	[.02, .56]
	Longitudinal	14	3 374	.11	.13	.12	.12	.14	.12	[.04, .20]	[−.05, .28]
Publication Status	Published	62	19 419	.25	.20	.19	.29	.22	.21	[.23, .34]	[.02, .56]
	Unpublished	15	3 261	.11	.14	.12	.12	.15	.13	[.04, .21]	[−.05, .30]

Note. k = number of studies contributing to meta-analysis; N = total sample size; $\bar{r}$ = mean observed correlation; SD_r = observed standard deviation of r; SD_{res} = residual standard deviation of r; $\bar{\rho}$ = mean operational validity (corrected for measurement error in the criterion only); SD_{r_c} = observed standard deviation of corrected correlations (r_c); SD_ρ = residual standard deviation of ρ; CI = confidence interval around $\bar{\rho}$; CR = credibility interval around $\bar{\rho}$. Correlations are corrected individually.

Furthermore, two plots were generated for the current meta-analysis. First, a cumulative plot was generated (Lau et al., 1995), which shows the effect of adding each study on the corrected validity, 95% CI, and 80% CR (see Figure 10). Each horizontal line in this graph represents the summary of the overall meta-analysis result as each study is added, allowing for the observation of changes in the overall estimate following the addition of each study to the analysis pool. Second, a forest plot was generated (Alavi et al., 2021), which is the graphical representation of the corrected mean validity of all the studies included in the meta-analysis (see Figure 11). This graph illustrates the corrected validity estimate of each of the studies involved in the meta-analysis in a separate line. The horizontal line drawn for each study shows the confidence intervals around the corrected validity of the study. A longer line indicates a wider confidence interval and accordingly a less precise estimate. Estimates close to the central vertical line indicate a lack of relationship represented in a close-to-zero corrected validity. Although each displayed study result allows for further understanding of the relationship examined, "none of these studies alone can be used as a basis for deciding on the status of the expected effect" (Alavi et al., 2021, p. 1099).

Three observations regarding these results are worth noting. First, this suggests that the overall uncorrected and corrected validities involving the relationship between work values and job performance are moderate to relatively large, compared to the individual differences literature, as will be discussed later

(Bosco et al., 2015; Gignac & Szodorai, 2016; Paterson et al., 2016). Second, in interpreting the heterogeneity of the results, researchers have typically referred to the value of SD_{rc} or the width of the associated CR (Wiernik et al., 2017). Other researchers (e.g., Higgins & Thompson, 2002) have referred to other indicators of heterogeneity (e.g., % Variance Accounted For, Q, I^2). However, Wiernik et al. (2017) have recommended against using the previous heterogeneity statistics, and recommended instead to use normative and objective interpretations of credibility intervals. The normative interpretation applies to our study and refers to comparing ρ (corrected validity), SD_{rc}, and CR endpoints to a relevant empirical distribution of effect sizes. The goal is to examine if the CR spans a wide range of a comparable empirical distribution, and in this case, examining moderators would be valuable (Wiernik et al., 2017). By making a comparison between our study and the examples reported in Wiernik et al. (2017), based on the data from Paterson et al. (2016), our estimates seem to span a large portion of the distribution of comparable correlations, which suggests high heterogeneity and gives support to examining moderators of this relationship.

Another recommendation discussed by Wiernik et al. (2017) is to consider placing confidence intervals around the SD_{rc}. Using *psycmeta*, a bootstrap analysis was conducted for all the meta-analysis results including SD_{rc} (see Appendix D for the bootstrap results). The bootstrapped SD_{rc} value showed a mean of .21, and the 95% CI bounds for SD_{rc} were estimated to be .17 and .27. Finally, additional

heterogeneity statistics were generated (e.g., % Variance Accounted For, Q, I^2), and

they are reported in Appendix D for reference. These results also support

examining moderators.

Figure 10

A Cumulative Meta-Analysis Graph.
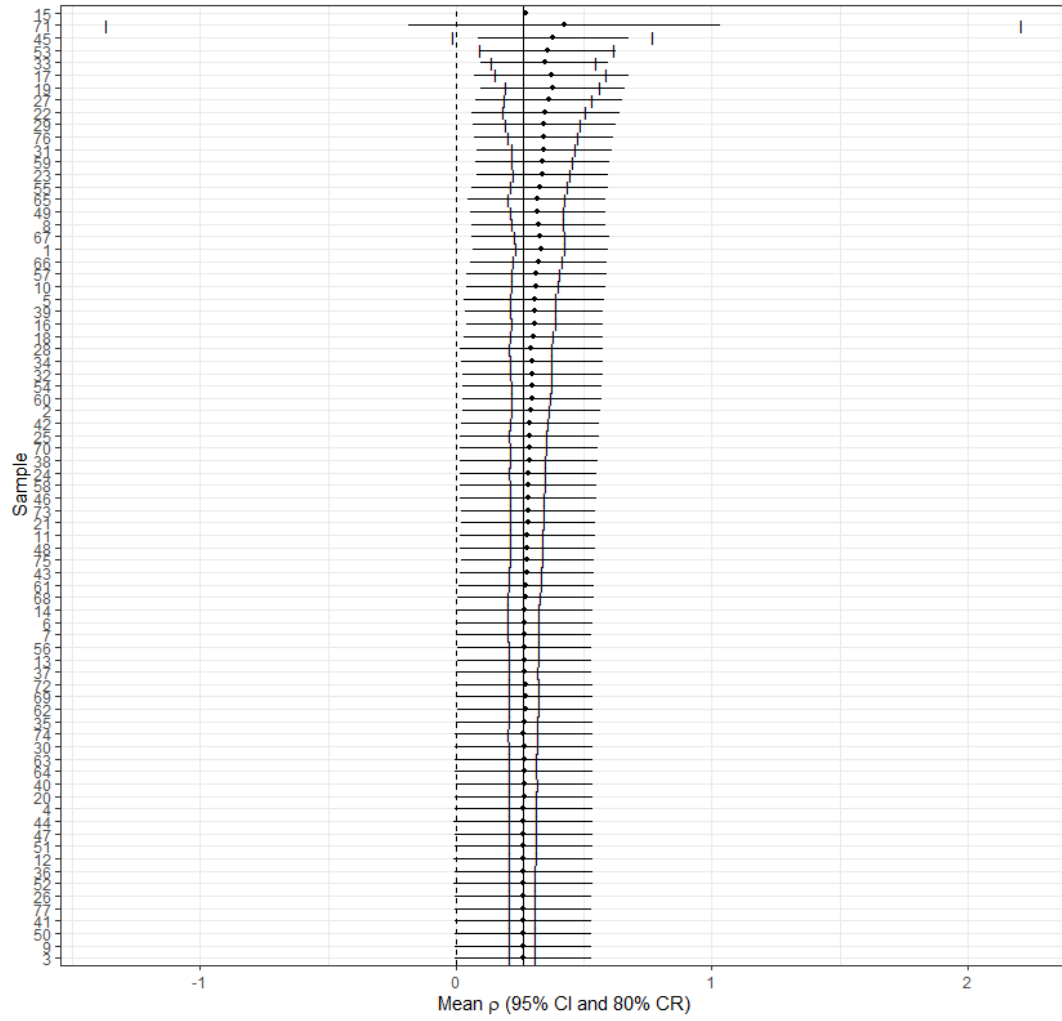
Figure 11

A Forest Plot of the Studies Included in the Meta-Analysis.
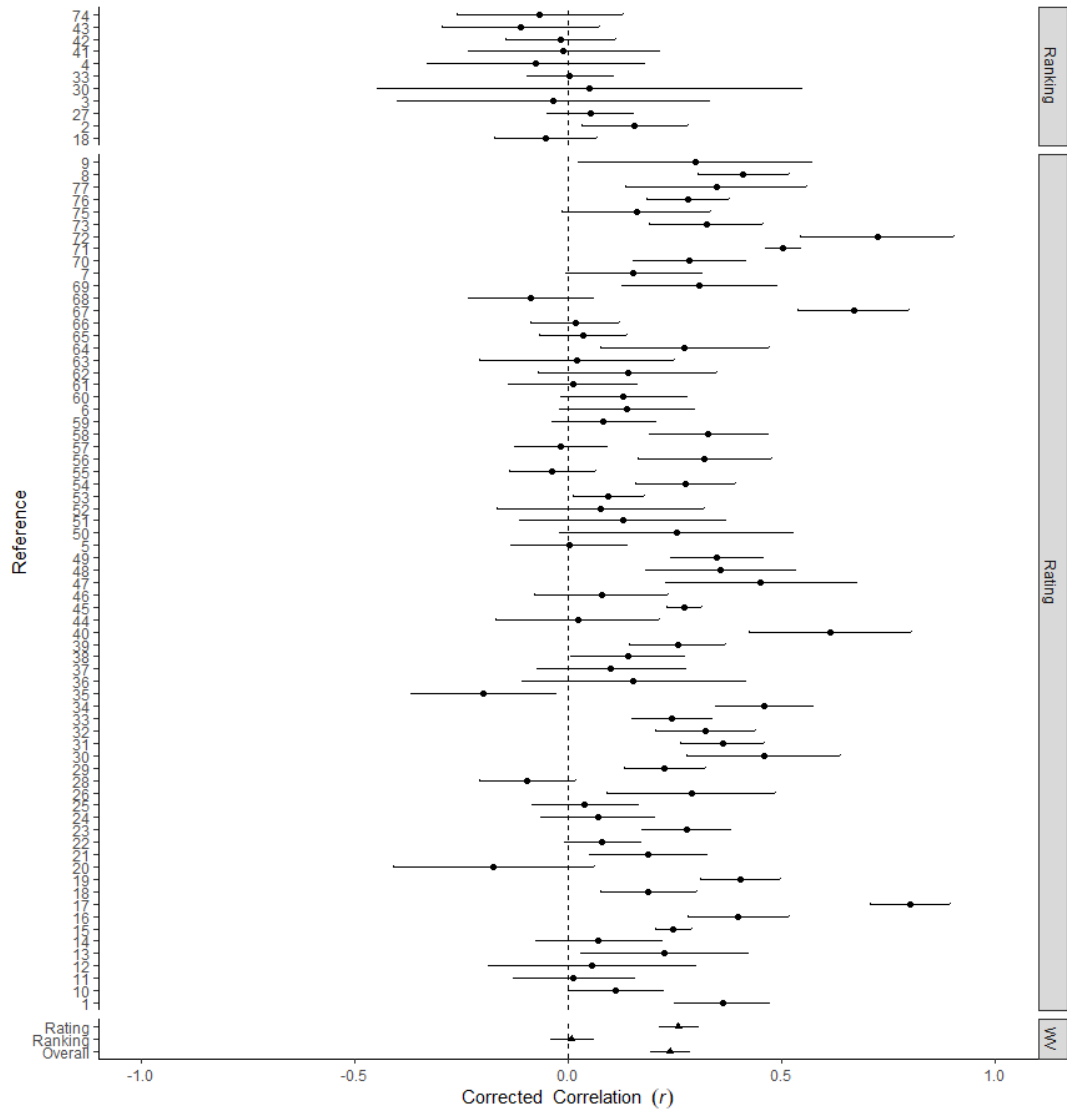
Third, before proceeding with the hypotheses and research questions examined in the current study, another observation can be made based on the results of the meta-analysis shown in Table 7. Specifically, one of the exploratory moderators coded in the current study was related to the measurement approach of work values. This included rating, ranking (e.g., forced choice, Q-sorting, or ranking measures), or others. The majority of the studies included in this meta-analysis used the rating approach for measuring work values (69 studies), while a smaller number of studies used the ranking approaches (11 studies). As shown in the results, the mean corrected validity estimate for ranking-based studies is substantially lower than that for rating-based studies (.01 compared to .28, respectively). This calls into question the practicality of any following interpretation involving these close-to-zero validities of ranking-based studies' ipsative measures.

As will be discussed later, these ipsative measures may not be appropriate for normative comparisons (between-subjects) given their within-subject nature. The weak psychometric properties of these measures present a valid concern for interpreting the validities of work values with the potential of downward bias based on including the results of these measures that are not typically used in selection settings. This is further supported by the examination of the forest plot (Figure 11) which shows the estimates of the ranking-based studies at the top of the plot, followed by that of the rating-based studies. In addition, this was supported by

examination of the meta-analysis results of the ranking-based studies only, which are provided in Appendix E. The results in Appendix E show that across almost all levels of all moderators used, the corrected validities of ranking-based studies are either close to zero or negative. Based on these results and supported by the small number of ranking-based studies in the current study, it was decided that the following discussion will focus on the results of rating-based studies only.

Rating-Based Study Results

Table 8 summarizes the results of the meta-analysis of rating-based studies. The analysis is based on 69 studies (independent samples) involving 21,318 individuals. The results show that the overall observed validity is .25 and that the corrected validity is .28 (SD_{rc} = .21, 95% CI [.23, .33], 80% CR [.03, .54]). This moderate to relatively large magnitude of operational validity is also associated with relatively large SD_{rc} and 80% CR, suggesting high heterogeneity and the usefulness of examining moderators of this relationship. Furthermore, additional heterogeneity information for rating-based studies is reported in Appendix D. In addition, similar to our analyses conducted for the overall dataset, a retrospective power analysis was conducted for this meta-analysis of rating-based studies and the power level obtained was 1.0.

Table 8

Results of Meta-Analyses for Rating-Based Studies.

Moderator	Moderator Level	k	N	$\bar{r}$	SD_r	SD_{res}	$\bar{\rho}$	SD_{r_c}	SD_ρ	95% CI	80% CR
Overall Estimate		69	21 318	.25	.19	.18	.28	.21	.20	[.23, .33]	[.03, .54]
WV Type	Independent	29	9 232	.21	.20	.19	.25	.23	.22	[.16, .33]	[−.04, .54]
	Congruence	42	12 306	.28	.18	.17	.31	.19	.19	[.25, .37]	[.06, .55]
Congruence Operationalization	Organization	33	10 248	.30	.19	.18	.32	.20	.19	[.25, .39]	[.06, .57]
	Supervisor	9	2 428	.21	.13	.12	.23	.14	.13	[.12, .35]	[.06, .41]
	Group	3	339	.24	.14	.11	.27	.15	.12	[−.11, .65]	[.04, .49]
	Job	1	119	.39	—	—	.43	—	—	[.26, .60]	[—, —]

206

Moderator	Moderator Level	k	N	$\bar{r}$	SD_r	SD_{res}	$\bar{\rho}$	SD_{r_c}	SD_ρ	95% CI	80% CR
Congruence Category	Direct (Perceived)	35	11 035	.31	.17	.16	.34	.18	.18	[.27, .40]	[.11, .56]
	Indirect (Objective, Subjective)	8	1 355	.06	.08	.03	.07	.09	.03	[−.01, .14]	[.02, .11]
Congruence Assessment	Perceived	35	11 035	.31	.17	.16	.34	.18	.18	[.27, .40]	[.11, .56]
	Subjective	2	283	.10	.06	.00	.12	.06	.00	[−.41, .65]	[.12, .12]
	Objective	6	1 072	.05	.09	.05	.06	.10	.05	[−.04, .16]	[−.02, .13]
JP Type	Task	37	9 912	.21	.20	.19	.23	.21	.20	[.15, .30]	[−.04, .49]
	Contextual	31	10 568	.35	.15	.14	.39	.17	.16	[.32, .45]	[.18, .60]
	Unspecified	15	5 476	.16	.12	.11	.19	.15	.14	[.10, .27]	[.00, .37]

207

Moderator	Moderator Level	k	N	$\bar{r}$	SD_r	SD_{res}	$\bar{\rho}$	SD_{r_c}	SD_ρ	95% CI	80% CR
JP Assessment	Subjective	67	20 940	.26	.18	.17	.29	.20	.19	[.24, .34]	[.04, .54]
	Objective	4	660	−.04	.14	.12	−.04	.14	.12	[−.27, .19]	[−.23, .16]
JP Source	Supervisor	37	10 115	.17	.14	.13	.19	.16	.15	[.13, .24]	[−.01, .38]
	Self	33	11 179	.34	.18	.17	.38	.20	.19	[.31, .45]	[.13, .62]
	Peer	1	89	.29	—	—	.30	—	—	[.10, .50]	[—, —]
	Organization	4	660	−.04	.14	.12	−.04	.14	.12	[−.27, .19]	[−.23, .16]
Task-JP Source	Other-Reported	29	5 994	.14	.17	.15	.15	.18	.16	[.08, .22]	[−.07, .36]
	Self-Reported	10	4 176	.31	.20	.19	.33	.22	.21	[.18, .49]	[.04, .62]
Study Type	Cross-sectional	58	18 691	.27	.19	.18	.31	.21	.20	[.25, .36]	[.04, .57]
	Longitudinal	11	2 627	.14	.14	.12	.15	.15	.13	[.05, .25]	[−.03, .33]

Moderator	Moderator Level	k	N	$\bar{r}$	SD_r	SD_{res}	$\bar{\rho}$	SD_{r_c}	SD_ρ	95% CI	80% CR
Publication Status	Published	56	18 564	.27	.19	.18	.30	.21	.20	[.25, .36]	[.04, .57]
	Unpublished	13	2 754	.16	.14	.12	.17	.15	.13	[.08, .26]	[−.01, .35]

Note. k = number of studies contributing to meta-analysis; N = total sample size; $\bar{r}$ = mean observed correlation; SD_r = observed standard deviation of r; SD_{res} = residual standard deviation of r; $\bar{\rho}$ = mean operational validity (corrected for measurement error in the criterion only); SD_{r_c} = observed standard deviation of corrected correlations (r_c); SD_ρ = residual standard deviation of ρ; CI = confidence interval around $\bar{\rho}$; CR = credibility interval around $\bar{\rho}$. Correlations are corrected individually.

As the current study has included self-ratings of performance (including task and contextual performance), we note that some previous meta-analyses excluded these studies in their analysis. Therefore, Table 8 includes an exploratory moderator of the task performance information source (self-assessment or others). Furthermore, Appendix F provides the summary of results for the rating-based meta-analysis when all self-rated performance studies are excluded (including the exclusion of self-rated contextual performance).

Hypotheses and Research Questions

Next, we report the results related to the specific study hypotheses and research questions. The results shown in the previous table (Table 8) will be used to comment on the results.

Hypothesis 1

Hypothesis 1: Work values will have a significant positive relationship with job performance.

The overall mean corrected validity was found to be positive (.28). Accordingly, Hypothesis 1 was supported.

Research Question 1

Research Question 1: What is the magnitude of the relationship between work values and job performance?

As for Research Question 1, the results show that the mean corrected validity of the relationship between work values and job performance is .28, which represents a moderate to relatively large magnitude (Bosco et al., 2015; Gignac & Szodorai, 2016; Paterson et al., 2016).

Hypothesis 2

Hypothesis 2: Work values will have a stronger relationship with contextual performance than task performance.

The corrected validities reported for contextual performance and task performance were .39 and .23, respectively. Hypothesis 2 was supported.

Hypothesis 3

Hypothesis 3: Work values will have a stronger relationship with subjective performance than objective performance.

The corrected validities reported for subjective performance and objective performance were .29 and -.04, respectively. Hypothesis 3 was supported.

Hypothesis 4

Hypothesis 4: Work value congruence will have a stronger relationship with job performance compared to independent work values.

The corrected validities reported for work value congruence and independent work values were .31 and .25, respectively. Hypothesis 4 was supported.

Hypothesis 5

Hypothesis 5: Perceived fit will have a stronger relationship with job performance compared to subjective or objective fit.

The corrected validities reported for perceived fit (direct assessment) and subjective/objective fit (indirect assessments) were .34 and .07, respectively. Hypothesis 5 was supported.

Hypothesis 6

Hypothesis 6: Subjective fit will have a stronger relationship with job performance compared to objective fit.

The corrected validities reported for subjective fit and objective fit were .12 and .06, respectively. Hypothesis 6 was supported.

Research Question 2

Research Question 2: What is the relationship between different work value fit operationalizations and job performance?

Congruence with the job had the highest corrected validity (.43), but we note that there was only one study that examined congruence with job work values.

Aside from that, congruence with the organization showed the next highest corrected validity (.32), followed by congruence with the group (.27), and congruence with the supervisor (.23).

Hypothesis 7

Hypothesis 7: (a) The work values of achievement, independence, relationships, and working conditions will have a stronger relationship with task performance than contextual performance. (b) The work values of recognition and support will have a stronger relationship with contextual performance than task performance.

As presented in Table 9, the work values factor of achievement had a corrected validity of .14 with task performance and .42 with contextual performance. In addition, the work values factor of independence had a corrected validity of .20 with task performance and .28 with contextual performance. Furthermore, the work values factor of relationships had a corrected validity of .15 with task performance and .23 with contextual performance. Finally, the work values factor of working conditions had a corrected validity of .13 with task performance and .16 with contextual performance. Based on these results showing stronger relationships with contextual performance for these four work values, Hypotheses 7(a) was not supported.

Table 9

Results of Meta-Analyses for Rating-Based Studies (Moderated by Work Values Factors and Job Performance Type)

ONET Factor	JP Type	k	N	$\bar{r}$	SD_r	SD_{res}	$\bar{\rho}$	SD_{r_c}	SD_ρ	95% CI	80% CR
Achievement	Overall	19	4 901	.19	.19	.18	.20	.21	.20	[0.10, 0.30]	[−.07, .47]
	Task	10	2 123	.13	.19	.17	.14	.21	.19	[−0.01, 0.29]	[−.12, .41]
	Contextual	3	1 138	.38	.10	.09	.42	.15	.14	[0.04, 0.81]	[.15, .70]
	Unspecified	6	1 640	.12	.15	.14	.13	.18	.16	[−0.05, 0.32]	[−.10, .37]
Independence	Overall	10	2 528	.17	.18	.17	.18	.21	.20	[0.03, 0.33]	[−.09, .46]
	Task	5	1 077	.16	.18	.17	.20	.20	.19	[−0.06, 0.45]	[−.09, .48]
	Contextual	3	1 030	.26	.17	.16	.28	.22	.21	[−0.26, 0.82]	[−.12, .67]
	Unspecified	3	784	.04	.10	.08	.04	.11	.09	[−0.24, 0.32]	[−.13, .21]

ONET Factor	JP Type	k	N	$\bar{r}$	SD_r	SD_{res}	$\bar{\rho}$	SD_{r_c}	SD_ρ	95% CI	80% CR
Recognition	Overall	13	3 152	.12	.15	.14	.13	.16	.15	[0.04, 0.23]	[−.07, .33]
	Task	7	1 440	.14	.20	.19	.14	.21	.20	[−0.05, 0.34]	[−.15, .43]
	Contextual	5	1 502	.20	.08	.06	.21	.08	.06	[0.11, 0.32]	[.12, .31]
	Unspecified	4	874	.01	.03	.00	.01	.03	.00	[−0.03, 0.06]	[.01, .01]
Relationships	Overall	14	3 266	.13	.13	.12	.15	.15	.13	[0.06, 0.23]	[−.03, .32]
	Task	8	1 554	.13	.18	.16	.15	.19	.18	[−0.02, 0.31]	[−.10, .39]
	Contextual	4	1 352	.21	.09	.08	.23	.11	.09	[0.06, 0.40]	[.08, .37]
	Unspecified	4	874	.07	.06	.00	.07	.08	.03	[−0.05, 0.20]	[.03, .12]
Support	Overall	3	634	.17	.22	.21	.17	.24	.23	[−0.43, 0.78]	[−.26, .61]
	Task	2	432	.09	.25	.24	.10	.26	.25	[−2.28, 2.48]	[−.69, .88]
	Contextual	1	202	.32	—	—	.36	—	—	[0.22, 0.50]	[—, —]

215

ONET Factor	JP Type	k	N	$\bar{r}$	SD_r	SD_{res}	$\bar{\rho}$	SD_{r_c}	SD_ρ	95% CI	80% CR
Working Conditions	Overall	13	3 379	.10	.15	.13	.10	.16	.15	[0.00, 0.20]	[−.10, .30]
	Task	6	1 453	.12	.19	.18	.13	.20	.19	[−0.08, 0.34]	[−.15, .41]
	Contextual	3	979	.14	.12	.10	.16	.15	.13	[−0.20, 0.52]	[−.09, .41]
	Unspecified	5	1 155	.03	.08	.05	.03	.09	.06	[−0.08, 0.14]	[−.06, .11]

Note. k = number of studies contributing to meta-analysis; N = total sample size; $\bar{r}$ = mean observed correlation; SD_r = observed standard deviation of r; SD_{res} = residual standard deviation of r; $\bar{\rho}$ = mean operational validity (corrected for measurement error in the criterion only); SD_{r_c} = observed standard deviation of corrected correlations (r_c); SD_ρ = residual standard deviation of ρ; CI = confidence interval around $\bar{\rho}$; CR = credibility interval around $\bar{\rho}$. Correlations are corrected individually.

The work values factor of recognition had a corrected validity of .14 with

task performance and .21 with contextual performance. In addition, the work values

factor of support had a corrected validity of .10 with task performance and .36 with

contextual performance (note that $k = 1$ for the relationship between support and

contextual performance). Based on these stronger relationships with contextual

performance for recognition and support, Hypothesis 7(b) was supported.

Hypothesis 8

Hypothesis 8: The relationship between job relevance and validity will be

positive, where higher levels of relevance will be associated with higher validity

coefficients.

To test this moderation effect of job relevance on validity, studies where

samples consisted of single occupations were identified. These occupations were

then matched with the corresponding occupation profile on O*NET and the work

values information for the six work value factors were obtained. Next, a multi-level

regression analysis was conducted to account for the existence of multiple effect

sizes within a given study. The limited number of studies that fit the testing

requirements of this hypothesis (more than two effect sizes per analysis and a

single occupation per study) means we were able to test this hypothesis using only

the work values of achievement, working conditions, recognition, and relationships.

As shown in Table 10, a few studies were identified for inclusion in testing this

hypothesis. The results of the multi-level regression indicated that the prediction of validity based on job relevance was weak and the *p*-values of the regression coefficients were not significant ($p > .05$). Hypothesis 8 was not supported.

Table 10

Descriptive Statistics and Multi-Level Regression Results for Work Value Validities Based on Job Relevance

Work Values	*Work Value Descriptives*				*Multi-Level Regression*			
	k	*N*	*M*	*SD*	*b*	*SE*	*t*	*p*
Achievement	7	23	67.43	19.77	.003	.003	1.006	.36
Working Conditions	3	8	59.33	28.29	.003	.001	2.236	.27
Recognition	4	5	61.75	18.96	.000	.006	-0.05	.96
Relationships	4	7	67.25	16.21	.001	.002	.315	.78

Note. k = number of studies contributing to regression analysis; N = number of effect sizes included in the regression analysis; M = mean of the corresponding work value scores obtained from O*NET; SD = standard deviation of the corresponding work value scores obtained from O*NET; b = unstandardized regression coefficient; SE = standard error of the unstandardized regression coefficient; t = *t*-test value of the unstandardized regression coefficient; p = *p*-value of the unstandardized regression coefficient.

Hypothesis 9

Hypothesis 9: The relationship between work values and job performance will be stronger for published studies than for unpublished studies.

The corrected validities reported for published and unpublished studies were .30 and .17, respectively. Hypothesis 9 was supported.

Hypothesis 10

Hypothesis 10: The relationship between work values and job performance will be stronger for cross-sectional studies than for longitudinal studies.

The corrected validities reported for cross-sectional and longitudinal studies were .31 and .15, respectively. Hypothesis 10 was supported.

Based on these results, most of the hypotheses were supported, except for Hypotheses 7 and 8. We discuss these results in the following section. Finally, additional exploratory analyses, including hierarchical meta-analyses of all levels of the examined moderators in addition to exploratory facet-level meta-analyses, can be found in the supplementary materials (see Appendix G).

Chapter 6
Discussion

Enhancing the job performance of employees is of central importance to organizations. Employee selection has been one of the main approaches organizations have used to improve job performance. The goal of employee selection is to help hire successful employees based in part on empirical findings related to major predictors of job performance. Previous research has focused on systematically studying the validity of many individual differences in predicting job performance, but so far, no meta-analyses have addressed the validity of work values. As a result, and without guidance concerning the empirical validity of work values as a predictor of job performance, work values have been neglected in selection contexts (e.g., Sackett et al., 2021). This is unfortunate given the importance of work values in driving employee decision-making and behaviors in the workplace, and the potential for improving selection systems through the incorporation of work values assessments. However, for this to happen, research needs to shed light on work values' validity in predicting job performance and clarify the nature of the relationship between work values and job performance in light of the scattered studies about work values across a wide range of disciplines in the literature (Agle & Caldwell, 1999).

The current study fills this gap in the literature related to the validity of work values in predicting job performance. This was done by systematically reviewing this relationship using qualitative and quantitative approaches. First, a thorough review of the domain of work values was conducted. This review aimed at clarifying the construct of work values and its relationship to other individual differences. We hope that this review will familiarize future researchers and practitioners with various aspects of the work values domain and help them make more informed decisions regarding the design of studies and interventions related to work values.

Second, the current study quantitatively summarized the evidence related to work values' operational validity by conducting a meta-analysis involving the results of 65 studies (77 unique samples) and 22,681 individuals. This meta-analysis examined various moderators, including different types and operationalizations of both work values and job performance. In addition, the results have been mapped onto the O*NET taxonomy of work values. The findings of this meta-analysis can help researchers and practitioners understand the nature and importance of using work values as a predictor of job performance. In the next section, the findings of this meta-analysis will be discussed in more detail.

Findings

The results of the meta-analysis showed that the estimated corrected validity of work values for all the examined studies is .26. It also showed that the corrected validity for rating-based studies (i.e., studies where values were measured with ratings) is .28, and for ranking-based studies (i.e., studies where values were measured with rankings) is .01. Although the overall estimate (.26) is positive and moderate to relatively large in magnitude (Bosco et al., 2015; Gignac & Szodorai, 2016; Paterson et al., 2016), the gap in validity between rating-based and ranking-based studies was not negligible. Ranking approaches are known to be associated with psychometric challenges based on their ipsative nature (C. E. Johnson et al., 1988). The ipsative scoring procedure leads to "low internal consistency reliability estimates and low correlations with other measures" (McCloy, Waugh, Medsker, et al., 1999b, p. 36), which impacts reliability and validity. As a result, these ipsative measures may not be useful for normative comparisons across individuals. This could put limits on their use for selection purposes (Meade, 2004).

For instance, one of the recently developed work values measures (The Munster Work Value Measure; Krumm et al., 2013) has included a rating version and a ranking version. They have discussed that the ranking version should be used for intraindividual comparisons, such as in making career decisions. On the other hand, the rating version should be used for screenings in selection procedures as it allows for interindividual comparisons. They suggested that in high-stakes

selection, where socially desirable responding needs to be considered, the use of rating measures can be complemented by rankings. In line with these considerations cautioning against the use of ranking measures in selection, our focus in analysis and interpretation of the meta-analysis results is on the majority of the studies involved in the current meta-analysis which used rating measurements, given its relevance and usefulness to applications in selection contexts.

Based on the estimated corrected validity of .28 for rating-based studies, this represents a positive relationship between work values and job performance that is considerable in terms of its magnitude. To put this magnitude in context, we refer to previous studies that reviewed estimates and distributions of effect sizes in the management and applied psychology fields (Bosco et al., 2015; Gignac & Szodorai, 2016; Paterson et al., 2016). First, Gignac and Szodorai (2016) recommended individual differences researchers consider .10, .20, and .30 as relatively small, typical, and large correlations, respectively. Based on this omnibus recommendation, the operational validity of work values in predicting job performance is considered relatively typical and close to being relatively large. Second, Paterson et al. (2016) provided meta-analytic estimates for effect sizes across research topics. For individual differences, they reported an average absolute value corrected effect size of .24. For performance evaluation, the average corrected effect size was .24, and for extra-role behaviors, the average corrected effect size was .25. Based on these estimates, .28 could be considered above

average in terms of its magnitude in relation to comparable effect sizes in individual differences research.

Third, Bosco et al. (2015) reported that medium effect sizes involving behaviors (i.e., attitudes/intentions-behaviors) are roughly between $|r| = .10$ and .25. Based on this heuristic, the corrected criterion-related validity of work values (.28) could be considered large. Bosco et al. (2015) have also provided effect size distribution percentiles for broad relation types including the relationship between performance and psychological characteristics. Based on their distribution percentiles, an effect size of .28 exists at roughly the 75th percentile. This suggests that it is a relatively large effect size (the 50th percentile matched an effect size of .16). Taken altogether, the previous references suggest that the work values corrected validity in predicting job performance is roughly moderate to relatively large in magnitude in relation to comparable individual differences validities. This is encouraging for improving the prediction of job performance as it reveals that work values might be a valuable addition to employee selection systems. This also logically reflects the role work values play as motivational drivers for employee behavior in the workplace, especially for job performance.

With regard to our hypothesis that work values will have a stronger relationship with contextual performance than task performance, the findings supported this hypothesis. This is in line with the propositions of the theory of

individual differences in task and contextual performance (Motowildo et al., 1997) in which contextual performance is predicted more by personality variables, whereas task performance is predicted more by cognitive abilities. However, the corrected validity for predicting task performance was sizable as well (.23), suggesting that work values are an important predictor of both types of performance, albeit being a stronger predictor of contextual performance (.39).

In addition, we hypothesized that work values will have a stronger relationship with subjective performance than objective performance, which was supported by our results. We expected that objective measures may reflect a limited range of work values and that subjective measures may assess areas of individual performance more comprehensively, allowing for observing the role of additional work values in predicting a wider range of performance-related behaviors. Other individual difference studies have also found the validity associated with subjective performance to be larger than that associated with objective performance (e.g., Nye et al., 2012, 2017).

Another of the examined hypotheses indicated that the validity of work value congruence would be higher than independent work values. This was also supported by the meta-analysis results. Although independent work values have shown a considerable corrected validity estimate of .25, the match between individuals and the environment with regard to work values has been shown to be

more valuable for predicting job performance as expected (.31). This reiterates the importance of designing jobs and work environments that fit with employees' preferences and work values in attaining higher job performance results.

Furthermore, we hypothesized that the validity of perceived fit (direct fit) would be higher than subjective or objective fit (indirect fit). This was also supported by the meta-analysis results. This affirms the proposition that an employee's perception of the extent of their fit with their environments has a stronger effect on their performance compared to other types of fit. Similarly, we also hypothesized that the validity of subjective fit would be higher than objective fit. This was also supported, further indicating that employees' perceptions of their environment matter more than actual or more objective assessments of the environment in forming the fit perceptions driving their job performance. This should encourage organizations to be careful and thoughtful about their communications with employees as these can be an opportunity to play a role in shaping employee perceptions of the work environment and their fit with the workplace, subsequently affecting their job performance.

With regard to the research question related to validity differences between different congruence targets, aside from congruence with the job which was based on one effect size in our dataset, congruence with the organization had the highest validity. This was followed by the validities for congruence with the group, and the

supervisor, respectively. Given that the lowest validity found was .23 (for congruence with the supervisor), this suggests that all congruence targets can play significant roles in influencing employee performance. Accordingly, organizations may need to pay attention to interventions and designs that could increase employee congruence with multiple environmental factors simultaneously to maximize employee performance.

In addition, we hypothesized that the work values of achievement, independence, relationships, and working conditions would have stronger relationships with task performance (than contextual performance), while the values of recognition and support would have stronger relationships with contextual performance (than task performance). We expected that some of these values would be related more to the job, leading to stronger relationships with task performance, while others would be related more to the organization, leading to stronger relationships with contextual performance. The results indicated that all of these dimensions of work values had stronger relationships with contextual performance than task performance. This finding may not be entirely surprising given that we earlier expected that work values in general would be more strongly connected to contextual performance, in line with the theory of individual differences in task and contextual performance which was supported earlier. It is possible that these factors of work values are less differentiated in terms of their effect on performance at a higher level, while more nuanced and specific facets of

work values could be more strongly related to task performance than contextual performance. Given that very few studies looked at this detailed level of work values, we will discuss this as a potential area for future research in the next section.

We also hypothesized that job relevancy would moderate the criterion-related validity of work values in predicting job performance. Unfortunately, only a few studies allowed for testing this proposition, and the results did not support this hypothesis. Based on the limited available information, work values may affect job performance similarly across occupations regardless of the job relevancy of work values to the nature of the job performed. However, given that the evidence for this is relatively limited, this is another area in need of additional research.

Furthermore, we hypothesized that cross-sectional studies would have higher validities than longitudinal studies. This was supported by the results of the meta-analysis. We note that the majority of examined work values studies involved cross-sectional research designs. This can provide needed information about the proximal effect of work values on job performance. However, examining the link between work values and job performance at different stages of job experience can also be valuable, as it would improve our understanding of the relative importance of work values across different stages of the employment experience, and when it is

expected to be more influential in predicting job performance (cf. Helmreich et al., 1986).

Finally, we hypothesized that the validity reported in published studies would be higher than that reported in unpublished studies. The results supported this hypothesis. This is in line with the publishing bias or the file-drawer effect, where publications focus on reporting significant results. For instance, the mean corrected validity for published studies in the current meta-analysis is .30, compared to .17 in the case of unpublished studies. This reiterates the need for academic journals to be inclusive in publishing all results, including non-significant results, to allow for a more informed understanding of the examined relationships in the literature without bias.

We also acknowledged that self-reported performance was not included in some previous individual differences meta-analyses (e.g., Van Iddekinge et al., 2011). In the current research, we reported findings excluding self-reported assessments of task performance (see Table 7 and Table 8) and excluding self-reported assessments of all performance types including contextual performance (see Appendix F). In general, these results suggested that validities involving self-reports were higher than validities involving other reports. However, we note that studies that have used self-reported assessments of job performance have varied in their application of these assessments. For instance, some studies have attempted to

improve the accuracy of self-assessments by asking respondents to report their supervisors' descriptions of their job performance, and others have emphasized anonymity or that the assessment will be used for research purposes only. There is evidence supporting the validity of using self-rated job performance as these relate highly with other subjective and objective measures when promised anonymity (Pym & Auld, 1965), and when they are collected for research purposes instead of administrative purposes (Bernardin & Beatty, 1984, as cited in Hutcheson, 1999, p. 63). Some studies have also found self-reports of performance to be consistent with manager's ratings (Churchill et al., 1985). Furthermore, even more support has been provided in the literature for self-ratings of OCBs/contextual performance based on the view that employees themselves may be the in best position to comprehensively report on their OCB behaviors, especially when supervisors may not be in a position to observe all or most OCBs in the workplace (Bolino et al., 2010; Ilies et al., 2009).

The next section will focus on discussing recommendations for researchers and the following section will focus on discussing recommendations for practitioners.

Limitations and Future Research

The current research adds to our understanding of work values and job performance but there are several limitations that should be noted and could be

addressed in future research. Although the current study attempted to identify eligible studies for inclusion in the meta-analysis based on a broad searching strategy and using major databases involving all types of studies, our search for conference papers and proceedings led to records that ultimately were mostly excluded for not meeting the inclusion criteria. Thus, published studies involved journal articles only and unpublished studies involved dissertations and theses and research reports only, as other types of research documents examined did not meet our inclusion criteria. Future research may attempt to locate additional unpublished studies by contacting administrators of relevant academic conferences (e.g., Society for Industrial and Organizational Psychology or Academy of Management) to try to find additional studies involving the examination of work values validity in predicting job performance.

In addition, many studies reported composite-level results for independent work values or work value congruency, without reporting work value results at a more detailed level (e.g., factor-level or facet-level). This made it difficult to investigate relationships of specific work values with job performance, given the limited studies available involving this level of specificity. Future studies are encouraged to use broad and comprehensive measures of work values to cover the wider domain of work values in the workplace. Also, future studies are encouraged to report details of work values' relationships with other variables at a more nuanced level.

231

Furthermore, the current research has quantitatively examined work values validity in predicting job performance from the perspective of selection contexts. This excluded the examination of work values from the later-stage position of need fulfillment (supplies-values fit) which assumes that need fulfillment measures are obtained following experiences on the job and the attainment of expected rewards. Future researchers are encouraged to systematically investigate the relationship between need fulfillment and job performance, and to be open to the different considerations involved in examining this unique aspect of work values. For instance, De Gieter Hofmans (2015) discussed individual differences in the effect of reward satisfaction on job performance. In addition, it may be associated with unique moderators, such as leader-member exchange (LMX; Marstand et al., 2017). Additionally, an interesting issue that could be useful to examine is the relationship between work values need fulfillment and different facets of job satisfaction (Borg et al., 2019).

Also, the current study has examined two primary types of job performance (task and contextual) but no other types of performance were included. Future research is encouraged to examine the relationship between work values and additional types of job performance, such as adaptive performance and creative performance. For instance, a recent study has found that the work values of comfort and security had negative relationships with creative performance, while the work

values of competence and growth and status and independence had positive relationships with creative performance (Ren et al., 2021).

Future research should also examine the extent of potential applicant faking for work values assessments. Although researchers have developed ranking-based measures to help reduce socially desirable responses of assessment takers (e.g., Krumm et al., 2013), the results of the current study showed low validity of ranking-based measures in predicting job performance, hindering their use in selection settings. Future studies should focus on detecting faking behavior on work value assessments and developing recommendations for decreasing faking while increasing the validity and utility of work value assessments.

In addition, many studies seem to have studied value congruence focusing on organizational values or focusing on a composite of values including organizational and work values. It is understandable that organizations may extend special attention to values that make sense from an organizational perspective, where organizations try to focus on employee fit with values reflecting operational or business and strategy-related goals. However, measuring work values (rather than organizational values) as they relate to individuals' preferences for workplace outcomes may be of additional value as work values are proximal drivers of employee decision-making and behaviors and may have a larger influence on employee job performance than congruence with organization-specific values.

Future research might focus more attention on assessments based on work values specifically, given the potential benefits supported by the results of the current study in predicting job performance.

Furthermore, the COVID-19 pandemic may have influenced work value dynamics in organizations but this could not be addressed in the current study. Although the pandemic has been ongoing for approximately the last two and half years, only one study in our final list (Luo & Cooper, 2022) has mentioned it. They reported work values as intrinsic and extrinsic dimensions but these values were measured once, so we could not observe if the pandemic has resulted in changes in work values during this period of time. Future primary studies may investigate the influence of the pandemic along with the associated surge in resignations (i.e., The Great Resignation; "Great Resignation," 2022) on workers' work values. For instance, it may be the case that these events have affected employee perceptions of desirable work values and how they would like to pursue them in the future given the changing work environment (e.g., by placing a greater value on the compensation-related work values, or giving more importance to favorable working conditions including working-from-home or flexible scheduling arrangements). Future studies might also examine the extent to which pandemic-related changes may have influenced the relationship between work values and job performance. For instance, after experiencing these extraordinary circumstances of the pandemic, some work values may have become stronger or weaker in terms of their influence

on job performance, thereby increasing or decreasing their validity in predicting job performance.

Future research is also encouraged to take a multidisciplinary approach in studying work values by incorporating research efforts across different lines of research that involve studying work values. For instance, previous studies involving work values have traditionally stemmed out from research on person-organization fit. However, researchers focusing on other topics, such as attitudes, can expand on the value congruence component of their examined constructs. For instance, value congruence has also been studied as a component of organizational identification (e.g., M. R. Edwards & Peccei, 2007; Finch et al., 2018).

Finally, more research is needed to reach a consensus about work values' structure or taxonomy, which shall help the field adopt a common view and understanding of work values that can be continually developed and refined. For instance, as noted by Rounds and Leuty (2020), earlier factor analyses based on the six-factor structure used by TWA and O*NET has shown some support for a seven-factor structure where the factor of working conditions is split into internal working conditions (e.g., activity, independence, and variety) and external working conditions (e.g., compensation, security, and working conditions). Such observations can help reconcile differences across various models or taxonomies of work values (e.g., see Leuty & Hansen, 2011). More discussions on work values

are needed to establish an agreed-upon taxonomy to be recommended for future research. In addition, such refined taxonomies must remain current to incorporate unique or contemporary variations of work values given new arrangements and conceptualizations of work environments and the potential range of benefits provided through modern employment.

In the end, researchers are also encouraged to consider incorporating work values in theorizing about predictors of job performance and to account for the important role that work values play in employee decision-making and behavior. This has the potential to provide additional explanatory power to future theories explaining the relationship between individual differences and work-related outcomes.

Practical Implications

The most valuable take-away from the current meta-analysis is the estimation of the mean sample size-adjusted corrected validity of work values in predicting job performance, which resulted in an operational validity of .28 for studies using rating measurements. The utility of this moderate to relatively large validity magnitude (cf. Bosco et al., 2015; Gignac & Szodorai, 2016; Paterson et al., 2016) can be compared to the operational validity identified for other predictors of job performance. For instance, based on Sackett et al.'s (2021) review and update of meta-analytic estimates of validity in personnel selection, this validity would be

ranked ninth amongst the predictors of job performance, lower than assessment centers (.30), and higher than situational judgment tests–knowledge (.26). This estimated level of validity is higher than some other known predictors of job performance such as personality (e.g., Conscientiousness–contextualized: .25). Based on the meta-analysis result, practitioners and researchers could find value in adding work values to selection test batteries and testing its incremental validity compared to other commonly used predictors of job performance. This can be particularly encouraging given the previous findings suggesting that work values are highly stable (Jin & Rounds, 2012) and show low or non-existent group differences (e.g., (Kashefi, 2011; Rowe & Snizek, 1995), which should help address the adverse impact challenges facing selection assessments.

It is also important to note that the studies involved in our meta-analysis have represented samples taken from countries around the globe. For instance, about 17 studies (26%) were conducted in countries outside of North America, Europe, and Australia, giving support to the generalizability and cross-cultural representation of the effect sizes examined. This extends the relevancy of our results beyond the western, educated, industrialized, rich, and democratic (WEIRD) societies (Henrich et al., 2010).

In addition, the discussed importance of work values in guiding individuals' decision-making and behaviors should drive organizations to thoughtfully consider

how they promote and communicate work values to potential employees starting from the recruitment stage, going through the selection process, and during their tenure at the company.

During the recruitment stage, organizations and managers need to pay attention to how clearly they are communicating the work values reflected in the workplace to their potential candidates. Candidates form perceptions and assumptions about the compatibility of the workplace with their work preferences and work values from the early stages of the process, based on what is communicated to them online and through interactions with the organization's representatives (e.g., recruitment staff). This can help attract candidates who perceive these organizations to fit with their work values based on the values that are shared by the organization and expressed in organizational activities (Kristof-Brown et al., 2005).

During the selection process, interviewers should consider candidates who share value systems similar to their work and work environment (Heflich, 1981). This assessment should focus on similarity with the work environment values rather than the extent to which they mirror the interviewer's values (Heflich, 1981). This can be especially important given previous findings suggesting that interviewers' assessments of candidate person-organization fit were driven by the perceived value congruence of the interviewer more than the objective fit of the

candidate work value congruence with the organization (Cable, 1995). This presents a challenge regarding the accuracy of interviewers' inferences of candidate work values and may require using multiple methods to examine the congruence of a candidate's work value system.

After the candidate joins the organization, managers should consider communicating the organization's vision and mission to foster value fit with the organization and to refer to common guiding principles that can unite team members towards shared desirable work outcomes. In addition, managers and organizations may attend to individual differences in work values to design jobs and incentive systems that maximize an employee's job performance. These individualized interventions that take into account employee work values can result in enhancing employees' perceptions of need fulfillment and satisfaction, increasing the effectiveness of supervisory support, enhancing the utility of HR practices, and fostering employee engagement (Schreurs et al., 2014). Accordingly, knowledge of an employee's work values and needs can be very useful for employers in creating new jobs or modifying existing ones (Rounds et al., 1981).

Finally, work values should be taken into consideration when planning for interventions for retention. This can be especially important given the newly developed high expectations about employment-related rewards resulting from the changing worker-employer relationship during the COVID-19 pandemic. As

239

employers engage in efforts to increase employee retention and encourage those working from home to return to the office, leaders can build on individual differences in work values and what they desire to achieve in the workplace to help increase the effectiveness of these interventions (De Smet et al., 2022).

Conclusion

The study of work values in organizational settings started to emerge in the organizational sciences literature during the 1960s (e.g., Fleishman & Peters, 1962; McMurry, 1963) when researchers advocated focusing on personal values to study compatibility between management and employees in work organizations (Watson & Simpson, 1978). Since then, research on work values in the workplace has demonstrated that work values are valuable predictors of employee decision-making and behaviors. However, researchers have long called for clarifying the nature and extent of the relationship between work values and job performance (e.g., Goodale, 1973; J.-I. C. Hansen & Wiernik, 2017). The current study contributes to filling this gap and helps to inform future researchers and practitioners on the value of work values in predicting job performance. Although work values have been underrepresented in the selection literature, and undervalued in employee selection practice, we hope that the current study stimulates further interest in studying work values for the benefit of both organizations and employees.

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Appendix A
Literature Search Keywords

In searching ProQuest databases for relevant studies, the current research used the Advanced Search feature where we check the option of "Exclude duplicate documents." The following keywords are used in the literature search process.

(((subject("work value?" AND "job performance") OR (ab,ti("work value?" OR "job? value?" OR "occupational value?" OR "work orientation" OR "job orientation" OR "value? congruenc?" OR "value? correspondence" OR "value? fit" OR "value? similarity") AND ab,ti("performance" OR "ocb?" OR "citizenship behavior" OR "productivity"))) AND stype.exact("Conference Papers & Proceedings" OR "Other Sources" OR "Trade Journals" OR "Reports" OR "Books" OR "Working Papers" OR "Scholarly Journals" OR "Dissertations & Theses")) NOT at.exact("News")) AND la("Eng")

The first part of this search line adds studies categorized by the database under both subjects of work values and job performance, regardless of their keywords. Using the "?" symbol allows for examining the word requested in addition to examining the addition of one letter at the end of it (i.e., "work value?" searches for "work value" and "work values"). Then, this search code asks for results at the title or abstract level that combine: (a) one or more of the keywords

related to work values and (b) one or more of the keywords related to job performance. After that, a specification is made to limit the results to source types of Conference Papers & Proceedings, Other Sources (e.g., extractions from articles), Trade Journals, Reports, Books, Working Papers, Scholarly Journals, or Dissertations & Theses. Also, the document type of News is excluded. Finally, only results in English are requested.

Note. During the screening of search results, the keyword "work orientation" has been the least effective. We note that future research might exclude this keyword as it has resulted in identifying many results that do not fit the inclusion criteria. Previous research has used this keyword to operationalize other constructs such as work ethics (Day & Bedeian, 1991; Gough, 1985), work centrality (D. Robinson et al., 1996), and types of organizational commitment (Smith, 1978).

Appendix B
Bibliography of Studies Included in the Meta-Analysis

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Appendix C
Influence Analysis
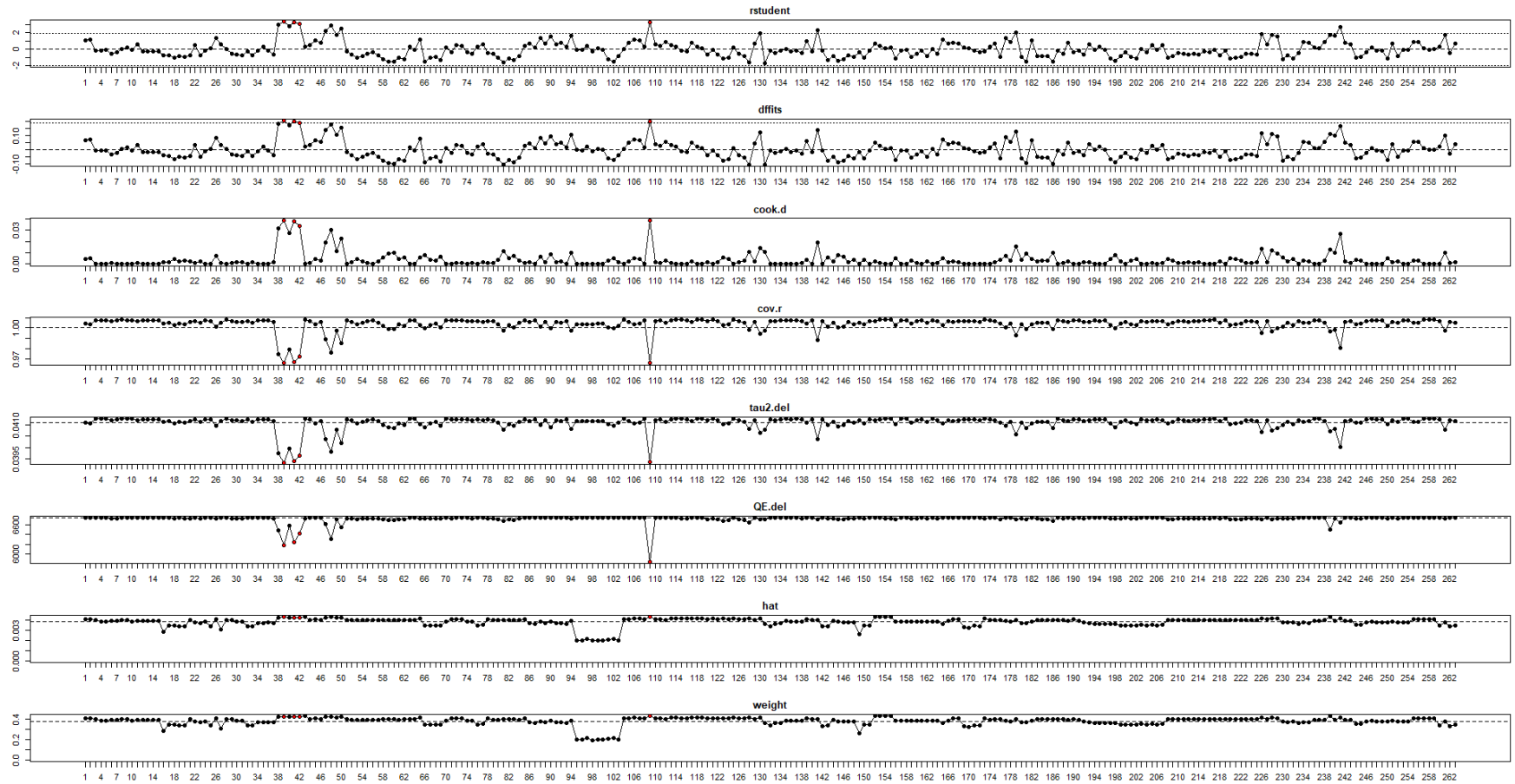
Appendix D
Bootstrapped Meta-Analysis Results

	boot_mean	boot_var	CI_LL_95	CI_LL_95
k	77	0	77	77
N	22700	14400000	17200	34300
mean_r	0.23	0.00	0.18	0.32
var_r	0.04	0.00	0.02	0.06
var_e	0.00	0.00	0.00	0.00
var_res	0.03	0.00	0.02	0.06
sd_r	0.19	0.00	0.15	0.24
se_r	0.02	0.00	0.02	0.03
sd_e	0.06	0.00	0.04	0.06
sd_res	0.18	0.00	0.14	0.24
mean_rho	0.26	0.00	0.20	0.35
var_r_c	0.05	0.05	0.00	0.07
var_e_c	0.00	0.00	0.00	0.01
var_rho	0.04	0.00	0.03	0.07
sd_r_c	0.21	0.00	0.17	0.27
se_r_c	0.02	0.00	0.02	0.03
sd_e_c	0.06	0.00	0.05	0.07
sd_rho	0.20	0.00	0.16	0.26
CI_LL_95	0.21	0.00	0.16	0.30
CI_UL_95	0.31	0.00	0.25	0.41
CR_LL_80	0.00	0.00	0.08	0.06
CR_UL_80	0.52	0.00	0.42	0.68

Note.

• *k* = Number of effect sizes meta-analyzed.

• *N* = Total sample size of all effect sizes in the meta-analysis.

• Mean_r = Mean observed correlation.

• var_r = Weighted variance of observed correlations.

• var_e = Predicted sampling-error variance of observed correlations.

• var_res = Variance of observed correlations after removing predicted sampling-error variance.

• sd_r = Square root of var_r.

• se_r = Standard error of mean_r.

• sd_e = Square root of var_e.

• sd_res = Square root of var_res.

• mean_rho Mean artifact-corrected correlation.

• var_r_c = Variance of artifact-corrected correlations.

• var_e_c = Predicted sampling-error variance of artifact-corrected correlations.

• var_rho = Variance of artifact-corrected correlations after removing predicted sampling-error variance.

• sd_r_c = Square root of var_r_c.

• se_r_c = Standard error of mean_rho.

• sd_e_c = Square root of var_e_c.

• sd_rho = Square root of var_rho.

• CI_LL_95 = Lower limit of the confidence interval around mean_rho, where "95" represents the confidence level as a percentage.

• CI_UL_95 = Upper limit of the confidence interval around mean_rho, where "95" represents the confidence level as a percentage.

• CR_LL_80 = Lower limit of the credibility interval around mean_rho, where "80" represents the credibility level as a percentage.

• CR_UL_80 = Upper limit of the credibility interval around mean_rho, where "80" represents the credibility level as a percentage.

Appendix E
Additional Heterogeneity Results

Heterogeneity results for r (Overall Meta-analysis)

Accounted for a total of 8.121% of variance

Correlation between r values and artifactual perturbations: 0.285

The reliability of observed effect sizes is: 0.919

Random effects variance estimates

Hunter-Schmidt method (with k-correction):

  sd_res (tau):   0.186, SE = 0.026, 95% CI = [0.158, 0.224]

  var_res (tau^2): 0.035, SE = 0.010, 95% CI = [0.025, 0.050]

  Q statistic: 935.888 (df = 76, p = 0.000)

  H: 3.509   H^2: 12.314   I^2: 91.879

DerSimonian-Laird method:

  sd_res (tau):   0.188

var_res (tau^2): 0.036

Q statistic: 938.119

H: 3.513   H^2: 12.344   I^2: 91.899

Outlier-robust method (absolute deviation from mean):

sd_res (tau_r):   0.198

var_res (tau_r^2): 0.039

Q_r statistic: 206.859

H_r: 3.389   H_r^2: 11.486   I_r^2: 0.913

Outlier-robust method (absolute deviation from median):

sd_res (tau_m):   0.193

var_res (tau_m^2): 0.037

Q_m statistic: 202.875

H_m: 3.302   H_m^2: 10.904   I_m^2: 0.908

Heterogeneity results for r (Rating-Measurement Meta-analysis)

Accounted for a total of 8.108% of variance

Correlation between r values and artifactual perturbations: 0.285

The reliability of observed effect sizes is: 0.919

Random effects variance estimates

Hunter-Schmidt method (with k-correction):

 sd_res (tau):   0.180, SE = 0.026, 95% CI = [0.151, 0.219]

 var_res (tau^2): 0.032, SE = 0.009, 95% CI = [0.023, 0.048]

 Q statistic: 838.700 (df = 68, p = 0.000)

 H: 3.512   H^2: 12.334   I^2: 91.892

DerSimonian-Laird method:

 sd_res (tau):   0.183

 var_res (tau^2): 0.033

Q statistic: 840.537

H: 3.516   H^2: 12.361   I^2: 91.910

Outlier-robust method (absolute deviation from mean):

 sd_res (tau_r):   0.186

 var_res (tau_r^2): 0.035

 Q_r statistic: 180.772

 H_r: 3.308   H_r^2: 10.940   I_r^2: 0.909

Outlier-robust method (absolute deviation from median):

 sd_res (tau_m):   0.183

 var_res (tau_m^2): 0.034

 Q_m statistic: 178.646

 H_m: 3.245   H_m^2: 10.530   I_m^2: 0.905

Appendix F
Results of Meta-Analyses for Ranking-Based Studies

Moderator	Moderator Level	k	N	$\bar{r}$	SD_r	SD_{res}	$\bar{\rho}$	SD_{r_c}	SD_ρ	95% CI	80% CR
Overall Estimate		11	2 137	.01	.08	.02	.01	.08	.02	[−.05, .06]	[−.02, .04]
WV Type	Independent	4	1 391	.04	.07	.04	.05	.07	.04	[−.06, .17]	[−.02, .12]
	Congruence	8	1 014	−.08	.06	.00	−.08	.07	.00	[−.14, −.03]	[−.08, −.08]
Congruence Operationalization	Organization	3	354	−.03	.06	.00	−.03	.06	.00	[−.17, .11]	[−.03, −.03]
	Supervisor	4	565	−.11	.06	.00	−.12	.07	.00	[−.23, −.02]	[−.12, −.12]
	Group	2	116	−.05	.04	.00	−.06	.06	.00	[−.57, .46]	[−.06, −.06]
	Job	1	21	−.01	—	—	−.01	—	—	[−.50, .47]	[—, —]

Moderator	Moderator Level	k	N	$\bar{r}$	SD_r	SD_{res}	$\bar{\rho}$	SD_{r_c}	SD_ρ	95% CI	80% CR
Congruence Category	Indirect (Objective, Subjective)	8	1 014	−.08	.06	.00	−.08	.07	.00	[−.14, −.03]	[−.08, −.08]
Congruence Assessment	Subjective	2	373	−.16	.08	.03	−.16	.08	.03	[−.89, .57]	[−.26, −.06]
	Objective	7	909	−.06	.04	.00	−.06	.05	.00	[−.11, −.02]	[−.06, −.06]
JP Type	Task	8	1 536	.01	.09	.06	.01	.10	.06	[−.07, .10]	[−.07, .10]
	Contextual	4	865	−.02	.03	.00	−.03	.03	.00	[−.08, .03]	[−.03, −.03]
	Unspecified	2	130	−.02	.01	.00	−.02	.02	.00	[−.17, .13]	[−.02, −.02]
JP Assessment	Subjective	10	1 909	−.02	.05	.00	−.02	.06	.00	[−.06, .02]	[−.02, −.02]
	Objective	2	273	.15	.05	.00	.15	.05	.00	[−.32, .62]	[.15, .15]
JP Source	Supervisor	8	1 417	−.02	.07	.00	−.01	.07	.00	[−.08, .05]	[−.01, −.01]
	Self	3	574	−.02	.06	.00	−.02	.07	.00	[−.20, .16]	[−.02, −.02]

Moderator	Moderator Level	k	N	$\bar{r}$	SD_r	SD_{res}	$\bar{\rho}$	SD_{r_c}	SD_{ρ}	95% CI	80% CR
	Organization	2	273	.15	.05	.00	.15	.05	.00	[−.32, .62]	[.15, .15]
Task-JP Source	Other-Reported	7	1 515	.01	.09	.06	.01	.10	.07	[−.08, .10]	[−.08, .11]
	Self-Reported	1	21	.22	—	—	.25	—	—	[−.22, .73]	[—, —]
Study Type	Cross-sectional	7	1 122	−.02	.04	.00	−.03	.05	.00	[−.07, .02]	[−.03, −.03]
	Longitudinal	4	1 015	.04	.10	.08	.04	.10	.08	[−.12, .21]	[−.08, .17]
Publication Status	Published	7	1 326	.01	.09	.05	.02	.10	.05	[−.07, .10]	[−.06, .09]
	Unpublished	4	811	−.00	.06	.00	−.00	.07	.00	[−.11, .11]	[−.00, −.00]

Note. k = number of studies contributing to meta-analysis; N = total sample size; $\bar{r}$ = mean observed correlation; SD_r = observed standard deviation of r; SD_{res} = residual standard deviation of r; $\bar{\rho}$ = mean operational validity (corrected for measurement error in the criterion only); SD_{r_c} = observed standard deviation of corrected correlations (r_c); SD_{ρ} = residual standard deviation of ρ; CI = confidence interval around $\bar{\rho}$; CR = credibility interval around $\bar{\rho}$. Correlations are corrected individually.

Appendix G
Results of Meta-Analyses for Rating-Based Studies (Without All Self-Reported Performance)

Moderator	Moderator Level	k	N	$\bar{r}$	SD_r	SD_{res}	$\bar{\rho}$	SD_{r_c}	SD_ρ	95% CI	80% CR
Overall Estimate		39	10 493	.16	.15	.14	.17	.17	.16	[0.12, 0.23]	[−.03, .38]
WV Type	Independent	18	5 943	.16	.14	.13	.18	.18	.16	[0.09, 0.27]	[−.04, .40]
	Congruence	23	4 770	.15	.16	.15	.16	.17	.16	[0.09, 0.24]	[−.05, .37]
Congruence Operationalization	Organization	18	3 525	.15	.18	.17	.16	.19	.18	[0.07, 0.26]	[−.08, .40]
	Supervisor	5	1 615	.15	.10	.09	.16	.11	.09	[0.03, 0.29]	[.03, .30]
	Group	2	220	.18	.14	.11	.20	.14	.10	[−1.10, 1.50]	[−.12, .52]

Moderator	Moderator Level	k	N	$\bar{r}$	SD_r	SD_{res}	$\bar{\rho}$	SD_{r_c}	SD_ρ	95% CI	80% CR
Congruence Category	Direct (Perceived)	17	3 698	.18	.17	.16	.19	.18	.17	[0.10, 0.29]	[−.03, .42]
	Indirect (Objective, Subjective)	6	1 072	.05	.09	.05	.06	.10	.05	[−0.04, 0.16]	[−.02, .13]
Congruence Assessment	Perceived	17	3 698	.18	.17	.16	.19	.18	.17	[0.10, 0.29]	[−.03, .42]
	Objective	6	1 072	.05	.09	.05	.06	.10	.05	[−0.04, 0.16]	[−.02, .13]
JP Type	Task	29	5 994	.14	.17	.15	.15	.18	.16	[0.08, 0.22]	[−.07, .36]
	Contextual	10	2 119	.22	.09	.07	.24	.10	.07	[0.16, 0.31]	[.14, .33]
	Unspecified	9	4 168	.16	.13	.12	.19	.17	.16	[0.06, 0.32]	[−.03, .41]
JP Assessment	Subjective	37	10 115	.17	.14	.13	.19	.16	.15	[0.13, 0.24]	[−.01, .38]

Moderator	Moderator Level	k	N	$\bar{r}$	SD_r	SD_{res}	$\bar{\rho}$	SD_{r_c}	SD_ρ	95% CI	80% CR
	Objective	4	660	−.04	.14	.12	−.04	.14	.12	[−0.27, 0.19]	[−.23, .16]
JP Source	Supervisor	37	10 115	.17	.14	.13	.19	.16	.15	[0.13, 0.24]	[−.01, .38]
	Peer	1	89	.29	—	—	.30	—	—	[0.10, 0.50]	[—, —]
	Organization	4	660	−.04	.14	.12	−.04	.14	.12	[−0.27, 0.19]	[−.23, .16]
Study Type	Cross-sectional	29	8 141	.17	.15	.14	.19	.18	.17	[0.12, 0.26]	[−.03, .41]
	Longitudinal	10	2 352	.13	.14	.12	.13	.15	.13	[0.03, 0.24]	[−.05, .31]
Publication Status	Published	32	8 933	.16	.15	.14	.18	.18	.16	[0.12, 0.24]	[−.03, .40]
	Unpublished	7	1 560	.13	.14	.12	.14	.15	.13	[0.00, 0.28]	[−.05, .33]

Note. k = number of studies contributing to meta-analysis; N = total sample size; $\bar{r}$ = mean observed correlation; SD_r = observed standard deviation of r; SD_{res} = residual standard deviation of r; $\bar{\rho}$ = mean operational validity (corrected for measurement error in the criterion only); SD_{r_c} = observed standard deviation of corrected correlations (r_c); SD_ρ = residual standard deviation of ρ; CI = confidence interval around $\bar{\rho}$; CR = credibility interval around $\bar{\rho}$. Correlations are corrected individually.

Appendix H
Open Science Practices (Supplementary Materials)

The following weblink offers access to a research repository that includes:

- The dataset used for the meta-analyses conducted in the current study.
- The R syntax involving the code used to conduct the analyses.
- Results of additional exploratory analyses.

https://osf.io/uj6sy

Researchers are encouraged to build on these data in conducting future studies. In such cases, please make sure to include the appropriate citation of the current dissertation (or the citation of the journal article if there is an updated published version).

Happy researching! :)