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WHAT DO WORK VALUE DIFFERENTIATION AND PROFILE ELEVATION PREDICT?

by

Jinhao Chi

A Thesis
Submitted to the Graduate School,
the College of Education and Psychology,
and the Department of Psychology
at The University of Southern Mississippi
in Partial Fulfillment of the Requirements
for the Degree of Master of Arts

December 2017

WHAT DO WORK VALUE DIFFERENTIATION AND

PROFILE ELEVATION PREDICT?

by Jinhao Chi

December 2017

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ABSTRACT

WHAT DO WORK VALUE DIFFERENTIATION AND

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Using a sample of 251 college students, it was found that 1) when differentiation (D) of work values was calculated using three indices, high-low D, Iachan D, and variance D, only Iachan D positively related to indecision but high-low D and variance D did not, 2) none of the three indices of D related to career maturity, 3) work values profile elevation (PE) positively related to extraversion, openness, and negatively related to depressive symptoms and career indecision but was unrelated to career certainty and neuroticism and 4) work values PE moderated the relationship between Iachan D and career indecision. The findings from this study benefit both vocational counselors and clients by improving the utility of individuals' work values results so that they can provide additional information to understand a person's work values profile.

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LIST OF ABBREVIATIONS

D	Differentiation
MIQ	Minnesota Importance Questionnaire
PE	Profile elevation

CHAPTER I - INTRODUCATION

Background

Vocational studies indicate that the match between the person and the environment is crucial to positive work outcomes (Dawis, 1996; Holland, 1985; Kristof, 1996). Specifically, if a person's interests (i.e., what one likes), abilities (i.e., what one can do), and values (i.e., what one finds important) match that of the work environment, the person is more likely to be satisfied with his or her job (Dawis, 1996; Holland, 1985). The importance of the fit between a person and his or her environment, known as Person-Environment fit (P-E fit), is the core assumption of a number of theories of vocational choice, with Holland's (1985) theory and the Theory of Work Adjustment (TWA; Dawis & Lofquist, 1984) being most popular.

Holland's (1985) theory centers on the importance of fit, or match, between one's vocational interests and the interests comprising the work environment. Vocational interests refer to what people like or dislike, both cognitively and affectively, about certain vocational characteristics (Hansen, 2004). Holland's (1985) RIASEC theory is one of the most popular ways of organizing and assessing vocational interests. His theory posits that there are six distinct vocational types based on interests, which are labeled realistic, investigative, artistic, social, enterprising, and conventional types, generally referred to by their acronym RIASEC. Fit, in Holland's theory, is referred to as congruence, or the extent to which a person's interests match the interests of their work environment (Hansen, 2004). Although the findings are somewhat inconsistent, researchers have found that the overall correlation between interest congruence and the job satisfaction was around .25 to .30 and congruence has also been found to be

positively related to persistence, success, and achievement at work and school (Hansen, 2004). These results support Strong's (1943) early hypothesis that if one is interested in an occupation and also possess the required ability to do the job, then the person will do well in the occupation.

As another person-environment fit theory, the Theory of Work Adjustment (TWA; Dawis & Lofquist, 1984) focuses the match between one's abilities and needs and that of the work environment, rather than the match of one's interests as is the focus of Holland's theory. TWA assumes that people have certain needs (e.g., comparable pay, job security, supervisory support), defined as "deficits," and that something in the work environment can fulfill these deficits, which is considered a "reinforcer" (Dawis & Lofquist, 1984). TWA posits that the match between one's needs and the reinforcers provided by the environment determine how satisfied the person is with the job. In addition, the match between one's abilities and the abilities required by the work environment determine how satisfactory a person's job performance is (Dawis, 1996). Thus, fit in TWA is said to predict an individual's satisfaction with the job, and the work environment's satisfaction with the worker's performance, known as satisfactoriness (Dawis, 2005). Research results indicate strong support for TWA. For example, Dawis (1996) reported numerous studies providing evidence for the hypotheses that person-environment correspondence predicts satisfaction and satisfactoriness.

To facilitate research on the concept of P-E fit from the perspectives of both Holland's theory and TWA, many measures of abilities and interests have been produced. Subsequent research based on these measures has been fruitful, which has aided in facilitating helping individuals identify matching occupational opportunities. In

comparison, measurement of needs or work values, the higher order classification of needs, has been less productive because assessment of needs and values brings unique challenges (Rokeach, 1973a) despite work values being a better predictor of job satisfaction than interests (Rounds, 1990). Therefore, the goal of the current study was to add to the literature on work values assessment by examining how work values results in a new manner, based on the differentiation and profile elevation of individuals' profiles, may relate to personality and career development constructs. The Minnesota Importance Questionnaire (MIQ; Rounds, Henley, Dawis, Lofquist, & Weiss, 1981), the measure of work values of focus, and relevant research are first reviewed, and then study hypotheses are delineated.

Minnesota Importance Questionnaire (MIQ)

Decades of research has produced several measures to assess vocational needs and values, such as Donald Super's (1970) Work Values Inventory, a list of values by Manhardt (1972), the MIQ and Ronen's (1994) Taxonomy of Needs. Of those available, the MIQ is probably the most comprehensive and useful (Rounds, 1990). The MIQ was initially created to operationalize the assessment of vocational needs as part of TWA but is useful in both career counseling and hiring situations (Rounds et al., 1981).

As alluded to before, the importance of various work reinforcers is conceptualized as needs in TWA, and this definition is similar to the definitions of values from other researchers. For example, Katzell (1964; p. 346) defined a work value as "that magnitude of a stimulus or job characteristic which evokes a relatively high level of satisfaction" and both Super and Rokeach agreed that the values are defined by the dimension of importance (Lofquist & Dawis, 1978). Moreover, Lofquist and Dawis (1978) proposed

that needs could be categorized based on their commonalities and therefore these second order needs can be considered as values. Using factor analyses to assess the commonality among the needs on the MIQ, Lofquist and Dawis reported that the 20 needs assessed by MIQ could be grouped into six overachieving work values, as listed in Table 1. As defined in the MIQ manual (Rounds et al., 1981), the value of achievement describes the importance of accomplishment. The value of comfort refers to the preference for a comfortable and non-stressful work environment. Status concerns the importance of acknowledgment and prominence. The value of altruism denotes the preference for harmony and service to others. The value of safety refers to the importance of predictability and stability. Finally, the preference for an environment that inspires initiative is reflected in the value of autonomy.

Revised several times, the current version of the MIQ is available in two formats, a pair-comparison form and a rank-order form. The paired form MIQ is an 18-page measure comprised of 210 items among which 190 items are sets of two need statements that correspond to every possible combination of the 20 needs, such as "a. I could be busy all the time" and "b. The job would provide an opportunity for advancement." Test takers are instructed to endorse the statement reflecting a more important value to them in their ideal job, thus making a choice between the two statements. The same statements are then presented again individually in the last 20 questions and the test takers are prompted to indicate whether the statement represents an important need to them (i.e., respond yes or no). It takes about 30 to 40 minutes to finish the paired form MIQ (Rounds et al., 1981). Alternatively, the rank-order form lists the need statements in groups of five instead of two as in the paired form. The rank-order form uses the same

need statements plus an additional “autonomy” need statement (e.g., “I could plan my work with little supervision.”) which was needed to balance the number of sets of statements presented. The test takers are asked to rank the statements in each group based on the relative importance each statement represents. The researchers developed the ranked order form as an alternative form for the purpose of repeated administration.

Limits of the MIQ. After several revisions, the current versions of the MIQ have accumulated strong empirical evidence of reliability and validity (Gay, Weiss, Hendel, Dawis, & Lofquist, 1971; Hendel & Weiss, 1970; Leuty & Hansen, 2011; Thorndike, Weiss, & Dawis, 1968a; Thorndike, Weiss, & Dawis, 1968b). However, there are still some limits to the utility of the MIQ. Specifically, information regarding the overall strength of scores or the elevation of the profile, as well as the variability among different need scores, is often ignored. This is problematic because, while two profiles may be considered as the same in terms of the ranking of the specific values or needs, more specific examinations of results may suggest that they are actually very distinct profiles given differences in the absolute magnitude of scores. For example, two individuals may produce MIQ profiles that have the same ranking of values, such as values ranked from most to least important as achievement, comfort, status, altruism, safety, and autonomy. However, one person may have endorsed all the values similarly high while a second person may have endorsed all values similarly low, while the within subject hierarchy of values of the two individuals are the same. In other words, while the relative ordering of both individuals’ results is the same, the overall profile elevation (PE) of the two profiles are very different. This piece of information regarding PE is often ignored in the typical use of the MIQ.

Two seemingly similar profiles may actually differ in another way. One individual may endorse several values that are similar in ranking while the other person has larger range between his or her scores. For example, person A and B have the same values hierarchies again as achievement, comfort, status, altruism, safety and autonomy, but Person A may have endorsed AC (achievement, comfort) highly, SA (status, altruism) moderately and SA (safety and autonomy) minimally, and thus the MIQ report indicates his/her profile as ACSASA. In contrast, person B has endorsed everything highly but endorsed achievement slightly more than comfort and endorsed comfort slightly more than status, such that the six values have scores in a very narrow range. Thus, this profile will also be ACSASA. In this case, according to the MIQ report, two persons' profiles are the same. However, the dispersions or the distributions of the values are actually very different. In other words, the differentiation (D), or the variability of the scores, are different. Again, this information is not addressed in the MIQ report explicitly.

In addition to the MIQ report itself, these subtle nuances regarding PE and D in work values may provide helpful information, about a client's career development. Furthermore, quantifying a person's PE and D of work values allows us to investigate their relationships with other variables of interest in career development. Thus, further research on D and PE on work values may increase the amount of information we can acquire from MIQ results and consequently may improve the utility of MIQ in making career decisions. In this regard, further review of the following constructs of PE and D is warranted.

Literature Review

Holland's Secondary Constructs: Differentiation and Profile Elevation

When developing his theory of vocational interests, Holland (1985) not only defined the one's RIASEC code types, but also defined a number of secondary constructs, beyond one's code type, to further understand one's pattern of interests and correlated outcomes. Differentiation and profile elevation are among many of these secondary constructs. Differentiation (D) reflects the distinctiveness of a person's profile of RIASEC themes, while profile elevation (PE) refers to the sum of six RIASEC scores, capturing the overall magnitude of one's interest results. Given that D and PE are constructs defined by Holland, they have been studied almost exclusively with interest data. However, both D and PE are constructs that may prove useful to examine in regards to values data. Thus, the following section will discuss D and PE as they have been researched with interests as a framework for understanding D and PE as they may apply to work values profiles on the MIQ.

Differentiation (D). Identified by Holland (1985) to serve the purpose of an index of a well-define profile, differentiation describes how well a person's interest profile is defined. A highly differentiated interest profile is typified by one dominate RIASEC interest type with relatively low endorsement of the remaining five RIASEC types. In contrast, low differentiation describes a profile in which all the RIASEC interests are similarly endorsed, regardless of their level of endorsement.

There are two ways to calculate the interest differentiation index as noted in the literature. One is the *high-low* differentiation score, which is also called the traditional differentiation score (Holland, 1985). A high-low differentiation score can be obtained by

subtracting the lowest RIASEC summary score from the highest RIASEC summary score among a person's six RIASEC summary scores (Holland, 1985), essentially producing the range of scores. The other method of calculating D is *Iachan differentiation index* and it is obtained by summing up the second and fourth highest RIASEC scores and dividing the sum by 2, and subtracting this resulting score from the highest summary score and multiply this subtotal by .5 (Iachan, 1984). Some researchers suggest that only the Iachan differentiation index should be used for research on differentiation of interests because it better captures the overall shape of the profile (Alvi, Khan, & Kirkwood., 1990). Furthermore, because D essentially describes the variability of scores in a person's profile, researchers studying general values or work values, operationalize D of work values profiles using within subject variance (Miller, 1974; Shrum & McCarty, 1992). To distinguish this form of D from other two, it will be referred as the *variance D* throughout.

Research on D in interests. Holland (1985) originally proposed that low interests D may be related to higher career indecision (i.e., a state of being undecided on a major or a career) because low interests D in a profile indicates that all areas of interest are similarly endorsed and thus there are not one or two areas of interest that are prominent to guide one's career choices. However, research has not consistently found such relationships (Holland & Holland, 1977; Lowe, 1981) or only found modest relationships (Hirschi, 2009; Jaensch, Hirschi, & Spurk, 2016). Differentiation in interests also appears to be unrelated to psychological adjustment, college satisfaction, and only modestly related to career maturity (Hirschi & Läge, 2007; Hirschi & Läge, 2008; Loughead & Reardon, 1989; Ohler et al, 1996). Thus, it was concluded that, compared to other

secondary constructs, interests D might be a weak indicator of career attitudes (Reardon & Lenz, 1999). Nonetheless, interests D is still considered a useful construct in practice settings because it provides a possible reason behind career choice difficulties when interests are endorsed at similar levels (Reardon & Lenz, 1999), as there are no interests standing out to facilitate the career choice making processes during career interventions.

In addition, the lack of significant relationships between interest differentiation and career issues might be due to researchers using a weak index of differentiation. Alvi et al. (1990) argued that Iachan D captures the overall profile better than the traditional high-low D, and recommended using Iachan D instead of high-low D for research on differentiation. Use of the traditional high-low differentiation in study by Ohler et al., (1996), might explain why they found that interests D was not related to career maturity. This suggests that further examination of differentiation's relationship with other variables, using better indices of differentiation, such as Iachan index or within-subject variance, is warranted.

Differentiation of work values. The utility of differentiation in career interest profiles has not received much empirical support and thus it appears to be a weak indicator of other career outcomes or attitudes. However, it does not necessarily mean that it is pointless to study D of MIQ results. Firstly, work values and career interests are distinct constructs. Breme and Cockriel (1975) studied the relationship between a work values measure, Work Value Inventory (Super, 1970), and a career interest measure, Vocational Preference Inventory (VPI; Holland, 1958). The highest correlation between vocational interests and work values was .38 ($p < 0.01$) suggesting that vocational interests and work values are indeed related but separate constructs, and thus work values

D may be related differently to career attitudes.

Secondly, existing research highlights that D in work values and life values are related to other variables. For example, Miller (1974) examined the relationship between work values D (calculated with within-subject variance) and vocational maturity. Vocational or career maturity reflects how prepared a person is to make career decisions that are well informed and developmentally appropriate to deal with tasks related to career development (Savickas, 1984). Miller measured work values using Work Value Inventory (Super, 1970) and vocational maturity using the Attitude Scale from the Vocational Development Inventory (Crites, 1971), which is an earlier version of Career Maturity Inventory (Crites & Savickas, 1996). Miller (1974) found that vocational maturity and differentiation in work values were moderately correlated for women (r = .43, 95% CI = .13 to .66) but not for men (r = .13, 95% CI = -.29 to .51). These results may suggest that low differentiation, where every value is endorsed as equally important or unimportant, may delay one's ability to make career decisions. Issues with this study's sample, such as a small sample size that was predominately female (e.g., 24 males and 38 females), may have limited power to detect possible effects. Furthermore, male and female participants were not demographically similar, as the male participants in the sample were significantly younger and thus possibly less vocationally mature than the females. These limitations suggest that their findings for males may not be generalizable, and warrants further replication on the relations between work values D and career maturity.

Lastly, although past research indicates that interests D was unrelated to career indecision, work values D may still be related to career indecision because low D reflects

a state where the importance of various aspects of a job are less distinguished, which consequently may put a person in a difficult position to make a career choice. This supposition is consistent with Brown's theory of occupational choice, satisfaction, and success (Brown, 2002). Among all the factors that influence career choices, he reasoned that the most crucial determinants of career choice are the highly prioritized work values. The work values are considered as prioritized when a person can rank order them based on their relative importance to oneself (Brown, 2002). Based on this definition, when a person's work values are prioritized, they also should have high differentiation as well. In contrast, when they are not prioritized, they may have low differentiation because the person is not clear about the relative importance of these work values and rate them as equally important or unimportant. Thus, based on Brown's supposition of the importance of prioritized work values on career choice and decision, which can be operationalized by differentiation, the current study will also examine whether work values D negatively relates to career indecision.

In summary, the existent research and theories suggest work values D may be related to vocational maturity and possibly career indecision. In addition, in the study by Miller (1974), work values D was operationalized as the within-subject variance, which is different from high-low D and Iachan D. Therefore, an additional goal of the current study was to examine all three indices of D of MIQ results (i.e., traditional or high-low D, Iachan D, and variance D) to see whether they predict career maturity and indecision, and if so, which index is a better predictor of these variables.

Profile Elevation (PE). Holland, Johnston, and Asama (1994) conceptualized PE as the overall level of one's interest results. Relative to D, there are fewer ways in which

PE has been calculated in the vocational interest literature. Holland et al. (1994) calculated PE by adding up all the scores in the six RIASEC scales on an interest measure. Alternatively, instead of using total scores as a measure of PE, some researchers use the one highest RIASEC score in the profile to operationalize PE (Swanson & Hansen, 1986). However, the sums of scores better capture the overall elevation of one's profile than just examining the magnitude of the highest score, because two persons can have the same highest score, but very different sums of scores.

Research on Profile Elevation in interests. Research on PE of interests has been fruitful in career interest literature. Previous research indicates that PE is related to academic performance (Jacobsen, 1928), such that college women classified as having higher PE, showed better educational ability than women endorsing fewer interest items, while accounting for intelligence. Swanson and Hansen (1986) further found that PE was positively related to college grade point average (GPA), academic comfort, and the prospect of staying in college.

Another consistent finding is that PE is related to personality traits. Gottfredson and Jones (1993) reviewed the relationship between PE and personality traits and indicated that "high elevation to some degree reflects an expressive, enthusiastic, or impulsive general style and low elevation reflects the opposite" (p.47). Despite this, given empirical evidence, they also concluded that the relationship between personality and PE was weak since all the correlations between PE and the big five personality traits (i.e., extraversion, neuroticism, openness, agreeableness, and conscientiousness) were less than |-.17| (neuroticism) in women and less than |.19| (extraversion) in men.

Further research by Holland, Johnston, and Asama (1994) found that PE was

positively correlated with openness (.50 for males and .45 for females) and extraversion (.33 for males and .30 for females) and negatively correlated with neuroticism (-.37 for males) and depression (-.34 for males and -.23 for females). This finding supports Holland's supposition of low PE as indicative of depressive traits (Holland, 1985). Moreover, this finding is clinically relevant in the context of both personal and career counseling, where co-occurring depressive symptoms also may be a relevant focus of treatment. Later, Fuller, Holland, and Johnston (1999) replicated this study and showed that PE was related to openness and extraversion, although the association between PE and neuroticism was only significant in men.

After finding consistent relationships between PE and personality traits, researchers started to explore the mechanism behind these relationships (Fuller et al., 1999). They argued that people high in extraversion tend to be "outgoing, sociable and cheerful" and people high in openness are inclined to be open to new experiences, thus, these people are more likely to be open to new vocations and skills and therefore positively endorse more items that they have not considered before and consequently produce higher PE. In contrast, people who are low in extraversion and openness may be closed to new experiences and may be inclined to feel sadness and frustration and thus less willing to consider new job opportunities. Based on these results, the researchers pointed out that the relations between PE and personality traits are not merely correlational but indeed provide support for the utility of interest inventories to be used as initial indicators of personality traits.

Profile Elevation of Work Values. Although numerous studies on PE of vocational interests are available, few studies exist on PE in work values, leaving a huge gap in the

literature. As examination of PE in regards to interest results has proved to be beneficial, examination of these constructs with work values may be similarly advantageous. Thus, the current study aims to explore whether work values PE, similar to interests PE, relates to personality and depressive traits.

As pointed out before, interests PE is positively associated with openness and extraversion while being negatively related to neuroticism (Gottfredson & Jones, 1993; Fuller et al., 1999). Fuller et al. (1999) argued that theses associations exist because people who are high in extraversion and openness and low in neuroticism are more inclined to be open about new vocations and skills and thus tend to positively endorse the items that they have not considered before in the vocational inventories. Similarly, individuals with high openness and extraversion and low neuroticism may also show the tendency to be open about different kinds of needs and values and thus positively endorse the items they have not explicitly or seriously considered before in work values inventories and thus produce more highly elevated profiles.

Moreover, interests PE was also reported to be negatively related to depression (Holland et al., 1994), likely due to the reduction of interests and drives, which is one of the hallmarks of depression as indicated in the latest *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.) (American Psychiatric Association, 2013). Costello (1972) proposed that depression might result from loss of effectiveness of reinforcers. Similarly, diverse aspects of the job that used to be reinforcers may become ineffective and thus people with depression may endorse work values much lower than the population mean, leading to a reduction in work values profile elevation. Although the current study did not aim to compare depressed patients with normal population, it was assumed that

endorsement of any depressive traits was likely to have negative association with work values PE because depressive traits will reduce the effectiveness of different reinforcers of work needs in the environment. In other words, the reinforcers provided in the job environment become less reinforcing, which will consequently lead to decreased importance of these needs and works values. Therefore, it is expected that work values PE would negative relate to depressive traits.

The existent research on work values literature specifically suggests that additional associations between work values PE and career development variables are likely. For instance, Schulenberg and Vondracek (1993) examined the relationship between career certainty and higher, or elevated, work values specifically. Career certainty is one aspect of the career decision-making process and describes how certain a person feels about one's career choice. The researchers found that groups endorsing high and moderate career certainty reported greater importance in work values related to self-development, power over self and others, and money and security than individuals in the low career certainty group. However, no differences were found in the importance of values pertaining to a preference for jobs in which disengagement from work is likely. Although this study did not explicitly examine work values PE, finding that the magnitude of values was higher for differing levels of career certainty provides initial support for the association between profile elevation of work values and career certainty. Thus, the current study examined whether work values PE was related to career certainty hypothesizing that higher PE was more likely to relate to higher career certainty.

Interactions between D and PE. Holland (1985) assumed that individuals with low interests D, as labeled undifferentiated, were a unitary group of individuals whose

interests are not well defined and thus are likely to show the characteristics of unpredictability, and widely and loosely defined goals. Consequently, Holland hypothesized that low interests D would be associated with low vocational and academic achievement. Research shows that this assumption may not be true and this may explain why Holland and other researchers have not found a relationship between interests D and other constructs, such as career indecision. However, research investigating interests D and PE together suggests that interactions between the two differentially relate to career development. For instance, Swanson and Hansen (1986) found that, compared to individuals with low interests D and low PE, individuals with low D but high PE had higher GPAs, higher academic comfort, and higher probability of staying in college. More recently, Hirschi and Läge (2007) found that middle school students with undifferentiated interests, but higher PE, reported increased career exploration, readiness, vocational identity, and career planning than students with undifferentiated, but low elevated interests. Based on these findings, undifferentiated individuals cannot be treated as a homogeneous group.

Similarly, when studying the relationship of differentiation of work values with important variables in career development such as career certainty or maturity, it would be important to consider possible interactions with work values PE as well. One reason why high interests PE group showed increased GPA, academic comfort, and persistence by Swanson and Hansen (1986), and more career exploration, readiness, vocational identity, and career planning by Hirschi and Läge (2007) may be that these individuals had strong interests and thus had a greater likelihood to find some aspect of their coursework enjoyable. Similarly, individuals with high work values PE may have strong

work values. To them, many aspects of the work environment are important and thus motivating. In other words, they have strong needs that need to be fulfilled through work and these needs motive them to explore more and work harder. In contrast, those with low work values D may have lower motivation because they do not have such strong needs to fulfill through work. Moreover, high work values PE makes it more likely that at least some aspects of their highly important needs are fulfilled in a job. Therefore, high work values PE may represent being more adaptive, and thus more mature in regards to one's career development process. Thus, despite no research examining interactions between PE and D in work values, based on the study by Swanson and Hansen (1986) as well as Hirschi and Läge (2007), it makes intuitive sense to hypothesize that, on the one hand, it would be expected that when work values PE is high, a positive relationship between work values D and career maturity, would be greater. On the other hand, it can be predicted that higher work values PE may lead to lower indecision even among those with low differentiation.

The Present Study

Given the frequent use of work values assessments in the provision of career counseling services (Watkins, Campbell, & Nieberding, 1993), the current study aimed to advance the literature on work values assessment and interpretation. Specifically, the first goal of this study was to examine whether differentiation of work values results was related to career maturity and career indecision. In addition, in the interest literature, traditional or high-low D and Iachan D had been used to operationalize D while in values literature variance D was used. Some researchers in the interest literature argued that Iachan D captures the overall profile better than the traditional high-low D (Alvi et al.,

1990), but no studies have compared these three indices. Thus, the present study included all three indices and compared which index was the best predictor, or accounted for most variability in the dependent variables.

The second goal of the present study was to apply the research on profile elevation of interests to work values. Previous research on PE of interests suggested that interests PE was related to personality and depressive traits (Gottfredson & Jones, 1993; Fuller et al., 1999) and the literature suggested that work values PE might relate to these variables similarly. In addition, work values played an important role in one's career development and decision-making (Schulenberg, Vondracek & Kim, 1993) but there is a gap in the literature regarding the influence of work values PE on the variables such as career certainty and career indecision.

Moreover, empirical research on interests D did not support Holland's initial speculations that low interests D might be related to more career decision difficulties or higher career indecision (Holland & Holland, 1977; Loughead & Reardon, 1989; Lowe, 1981; Ohler et al, 1996). However, as discussed previously, this might be due to the treatment of low and high D group as homogenous groups while neglecting the influence of PE. Thus, interactions between work values PE and D were examined and their relationship to various outcomes such as career maturity and career indecision.

Attention to covariates. Very rarely is there only one factor that influences one specific variable. Similarly, various factors likely contribute to a person's differentiation of work values, and thus accounting for these extraneous variables will prevent these variables from suppressing the relationships that truly exist. Review of the literature relevant to values assessment and the use of rating scales suggest private self-

consciousness and social desirability were relevant.

Private self-consciousness (PSC).

Shrum and McCarty (1992) pointed out that one factor that contributed to the differentiation in subjects' responses to rating scales was private self-consciousness (PSC). PSC refers to the tendency to pay attention to one's inner world, such as one's thoughts and feelings (Fenigstein, Scheier & Buss, 1975). In the study by Shrum and McCarty, the Rokeach Value Survey (RVS; Rokeach, 1973b) was used to measure life values, and the Self Consciousness Scale (Fenigstein, Scheier & Buss, 1975) was administered to assess private self-consciousness, finding that PSC scores were positively related to differentiation of RVS values They concluded that individuals with higher PSC had higher differentiation between different life values because they had better self-knowledge, awareness, and self-schema compared to individuals with lower PSC. In the same token, it is likely that this increased awareness as a result of higher PSC might not only relate to increased differentiation in diverse life values but also relate to increased differentiation of between work values. Thus, the current study accounted for PSC in examining the relations between work values D and career maturity and indecision, by including it as a covariate.

Social desirability bias (SDB).

Both differentiation and profile elevations scores can be influenced by other factors other than one's true D and PE levels. One of these factors is social desirability bias. Crowne and Marlowe (1964) described social desirability as "the need for social approval and acceptance and the belief that it can be attained by means of culturally acceptable and appropriate behaviors" (p. 109). It is generally believed that individuals

tend to present themselves in a favorable way, despite their true feelings about a subject or topic. This tendency is problematic because it may potentially bias the responses of individuals and change the average scores of their responses. In addition, it may hide relationships existing between two or more variables (Ganster, Hennessey & Luthans, 1983) or lead to spurious relationships. Fisher and Katz (2000) found that value measures contain a large portion of SDB in general and that the more important a certain value is in a culture, the more substantial SDB component it will contain. Thus, a measure of social desirability was included so that the influence of this tendency can be accounted for in study analyses.

Hypotheses

In summary, the purpose of the present study was to conduct initial investigation on PE and D in work values. Based on review of relevant literature, the following hypotheses were examined.

Hypothesis 1: Differentiation of work values, as calculated by high-low, Iachan, and variance differentiation indices, would be positively associated with career maturity but negatively related to career indecision.

Hypothesis 1a

Iachan differentiation would account for more variance in career maturity scores than high-low differentiation or variance differentiation.

Hypothesis 1b

Iachan differentiation would account for more variance of career indecision scores than high-low differentiation or variance differentiation.

Hypothesis 2: Work values profile elevation would positively relate to

extraversion, openness, and career certainty, but negatively relate to neuroticism, depressive traits, career indecision and career certainty.

Hypothesis 2a

Work values profile elevation would explain a significant portion of variance in extraversion, openness, neuroticism, depressive traits, career indecision and career certainty.

Hypothesis 3. Work values profile elevation would moderate the relationship between work values differentiation and career maturity.

Hypothesis 3a

Lower work values differentiation and higher profile elevation would predict higher career maturity.

Hypothesis 3b

Lower work values differentiation and lower profile elevation would predict lower career maturity.

Hypothesis 4. Work values profile elevation would moderate the relationship between work values differentiation and career indecision.

Hypothesis 4a

Lower work values differentiation and higher profile elevation would predict lower career indecision.

Hypothesis 4b

Low work values differentiation and lower profile elevation would predict higher career indecision.

CHAPTER II - METHOD

Sample and Instrument

Participants were 251 college students (157 females, 93 males and 1 other) with a mean age of 20.9 years (*SD* = 3.92) at a public university in the southeastern United States. Participants were recruited using SONA (https://usm.sona-systems.com), an online psychological research recruitment system used by participating psychology courses that required or allowed participation in research for partial course credit. Of the sample, 62.9% self-identified as White or Caucasian, 25.1% as Alaskan Native Black or African American and 4.4% as multi-cultural. Regarding class standing, 39% reported being freshmen, 22.7% being sophomores, 17.5% being juniors, 17.5% being seniors, and 3.2% being in in college five or more years. Roughly half (51%) of the participants reported that they were currently employed.

Measures

Work Importance Profiler (WIP).

Work values were measured with 20 items on the WIP (McCloy, Waugh, Medsker, Wall, Rivkin & Lewis, 1999) with a 7-point Likert scale (1= *least important* 7= *extremely important*). Developed by the U.S. Department of Labor, WIP is a revised version the MIQ that updated some wording of the questions. A Likert scale instead of the original rank-order form WIP was used because the rank-order from produces ipsative (i.e., individual rank-order data), which limits the ability to use the resulting data for some statistical analyses as well as not providing information on the absolute magnitude of one's values. A 7-point scale was chosen because research evidence shows that 7-point scale tend to produce better reliability, validity and discriminating power compared to

scales with fewer points (Preston & Colman, 2000). Additionally, using a Likert version can reduce administration time. The WIP Likert form takes about 5 minutes to complete while WIP and MIQ rank-order forms take approximately 25 minutes to complete.

According to the manual for the original WIP, the internal consistency reliability ranges from .70 to .80 for five of the six values scales while the reliability for the altruism scale was lower at .50 (Gay et al., 1971). The test-retest reliability on the original rank ordered version of the WIP, over a period of 4 to 8 weeks delay, ranges from .50 to .76 with a median of .63 for the 20 needs, and the test–retest reliability for the 6 values ranges from .59 to .66 with a median of .62 (McCloy et al., 1999). Moreover, in an unpublished study (Dr. Leuty, personal communication, Feb 4th, 2016), a 5-point Likert version of the WIP yielded acceptable reliability. Specifically, in a sample of working adults ($N = 258$), a Cronbach's alpha (Cronbach, 1946) of .80 for the full scale was found. The internal consistency of WIP for the present study was .91. Supportive evidence of construct validity has been found through exploratory and confirmatory factor analysis showing WIP had very similar factor structure as MIQ (McCloy et al., 1999).

Calculating profile elevation and differentiation scores. For the current study, the six values scores were calculated by averaging scores of the needs items under each corresponding value as is done for the calculation of values scores on the original WIP (McCloy et al., 1999), and based on these value scores the profile elevation and differentiation scores were generated. Profile elevation was calculated by taking the sum of the six values scores. The traditional high-low D was calculated by subtracting the lowest value score from the highest value score. The variance D was assessed by

calculating the within subject variance for the six values for an individual using SPSS. The Iachan D was calculated by adding the second and fourth highest value scores and dividing the sum by 2, and subtracting this score from the highest value score and multiplying this number by .5 (Iachan, 1984).

International Personality Item Pool (IPIP).

Personality traits were measured using 50 items taken from the International Personality Item Pool (IPIP; Goldberg, 1999), with 10 items for each factor of the five-factor model (i.e., extraversion, agreeableness, conscientiousness, neuroticism and openness; Goldberg, 1999). The 50 items are public domain alternatives to the NEO Personality Inventory (NEO-PI-R: Costa & McCrae, 1992) big 5 domains and can be obtained online (http://ipip.ori.org/newNEODomainsKey.htm). Participants were asked to rate how accurately each statement described them using 7-point Likert scale, ranging from 1 "*very inaccurate*" to 7 "*very accurate*." Some items were negatively coded and thus were reverse scored and added up with other items to produce the total score for each of the five personality traits. According to Goldberg (1999), the reliability of this version of IPIP was reported to range from .77 for agreeableness to .86 for extraversion, with the median being .82 for openness. Evidence for concurrent validity was provided given high correlations, ranging from .85 for agreeableness to .92 for neuroticism and conscientiousness between the IPIP scale and the NEO-PI-R scale based on which the IPIP scale was developed (Goldberg, 1999). In the present study, internal consistencies were .89, .81, 85, .88 and .83 for extraversion, openness, agreeableness, conscientiousness, and neuroticism, respectively.

Depression, Anxiety, and Stress Scales, short form (DASS-21).

The depression scale of the DASS-21 (Lovibond & Lovibond, 1995), that contains seven items, was used to measure depression. The participants were asked to respond to items using a 4-point Likert scale, 0 being "*did not apply to me*" to 3 "*applied to me very much or most of the time*." Higher scores are indicative greater endorsement of depressive symptoms. The internal consistency of the depression scale was .97 (Antony, Bieling, Cox, Enns, & Swinson, 1998). Additionally, Osman et al. (2012) reported that among a non-clinical college sample the internal consistency for the depression scale was .85. Cronbach alpha was .92 for the present study. Evidence for concurrent validity was established through the strong correlations between scales within DASS-21 and other corresponding questionnaires measuring depression (r = .79), anxiety (r = .85) and stress (r = .68) (Antony et al., 1998)

Career Decision Difficulties Questionnaire (CDDQ).

Career indecision was measured with 34-item version of Career Decision Difficulties Questionnaire (CDDQ; Gati, 2011), which is a shortened version of the original 44-item CDDQ. The CDDQ measures the sources of career indecision, or the domains of difficulties (Osipow, 1999) in terms of readiness, lack of information and difficulties related to inconsistent information using ten subscales (Gati, 2011). Participants were asked to respond to 9-point Likert scale (1 = *Does not describe me*; 9 = *Describes me well*). The average score across subscales were calculated to indicate a person's overall difficulties in making career decisions, with higher scores reflecting more difficulties being endorsed. According to the manual (Gati, 2011), internal consistency of CDDQ ranges from .88 to .95 with a median of .93 across samples. Internal consistently in the current study was .95. Gati et al. (1996) reported two-day test-

retest reliability of .80. Evidence for convergent validity was provided by Osipow and Gati (1998), finding that the CDDQ positively correlated with Career Decision Scale (CDS; Osipow, Carney, Winer, Yanico, & Koschier, 1987; *r* = .77) and negatively correlated with Career Decision-Making Self-Efficacy Scale (CDMSE; Taylor & Betz, 1983, *r* = -.52;), a measure assessing a person's self-efficacy in making career decisions.

Career Maturity Inventory (CMI) Form C.

Career maturity was measured with Career Maturity Inventory (CMI) Form C (Savickas & Porfeli, 2011). Evidence for construct validity was provided by the adequate loadings of the three first-order factors (Savickas & Porfeli, 2011). Comprised of 24 items, the internal consistency for the CMI total score from three subscales, excluding consultation, was .86. In the present study, the internal consistency was .76 for the total score.

Career Certainty

Based on brief literature search, only one standardized measure for career certainty was identified, which was comprised of two career certainty items as part of the Career Decision Scale (CDS; Osipow et al., 1987). However, there are only two items in this measure, which are poorly worded, such as being triple barreled, for example, "I have decided on a career and feel comfortable with it. I also know how to go about implementing my choice." Given the limited availability of psychometrically sound measures of this construct, it is not uncommon for researchers to use non-standardized measures to assess career certainty (e.g., Daniels et al., 2006). Thus, career certainty was measured with the following six statements for the current study. "I have made up my mind on a career." "I feel certain about my career choice." "I am committed to my career

decision." "I have made up my mind on a major." "I feel certain about the major I selected." "I am committed to my major." Participants responded to these statements on a 7-point Likert scale (1= *does not describe me well* to 7= *describes me well*). An exploratory factor analysis (EFA) of these items suggested a two-factor solution which reflected career certainty and major certainty. The confirmatory factor analysis (CFA) results suggested an overall adequate fit for the two-factor model providing an initial support for the measure (*RMSEA = .095, CFI=.99, TLI=.99,)*. The internal consistency (.95) was high despite there were only six items in the measure. The two factors were also strongly correlated at .71. Based on these results, the six items were combined into a single score to assess the overall career certainty level, with higher scores indicating higher career certainty. Evidence for convergent validity was adequate given the moderate correlations with career indecision (r = -.57) and career maturity (r = .66) in the current sample.

Self-Consciousness Scale Revised

Private self-consciousness (PSC) was measured using the 9-item private self-consciousness subscale from the Self-Consciousness Scale Revised (SCS-R; Scheier & Carver, 1985**).** The response format of SCS-R is a 4-point Likert scale (0 = *not like me at all* to 3 = *a lot like me*). High internal consistency (.75) has been found (Scheier & Carver, 1985). In the current study, the internal consistency was .77. The authors also reported 4-week test-retest reliability of .76 for private self-consciousness (Scheier & Carver, 1985). The evidence for construct validity for the revised version was provided by Scheier and Carver (1985) who reported that the factor loadings and norms were largely the same as the original version.

Marlowe-Crowne Social Desirability Scale Form C (MC-C)

Marlowe-Crowne Social Desirability Scale Form C (MC- C; Reynolds; 1982) is one of the shorter versions of the original Marlowe-Crowne Social Desirability Scale (MC; Crowne & Marlowe, 1960). MC-C was used to measure social desirability bias because compared to the original scale with 33 items, it has only 13 items and thus takes much less time to finish. In addition, by using confirmatory factor analysis, Loo & Thorpe (2000) found that MC-C showed adequate fit to the data (RMSEA < 0.05, and AGFIs > .90). Internal consistency of MC-C scores ranges from .62 to .76 (Ballard, 1992; Loo & Thorpe, 2000; Reynolds, 1982) and 6-week test-retest reliability was .74 (Zook & Sipps, 1985). The internal consistency was .68 for the current study. Evidence of construct validity was established given the high correlation between MC-C and the original MC scores, which ranged from .91 to .96 (Fischer & Fick, 1993; Loo & Thorpe, 2000; Reynolds, 1982).

Procedure

SONA was used to recruit participants. Individuals were asked to sign up for an online survey using their student identification number and password. However, the identification number was not collected with other data and the participants' responses remained anonymous. Individuals signing up through SONA were directed to an online survey host (i.e., Qualtrics) to complete the survey measures. Within Qualtrics, the consent form was presented first, and after individuals consented to participate in the study, the online survey questions were presented. Meade and Craig (2012) recommend having up to three validity items (i.e., "I have never brushed my teeth", or "Answer this question as very true") to screen out the participants who are not paying attention and

responding carelessly. Therefore, three directed response items were intermixed with other questions in the Qualtrics survey. The survey took about 45 to 60 minutes to finish.

CHAPTER III - RESULTS

Data screening was conducted before analyses. Of the initial 296 participants attempting the study, 27 male and 18 female participants were excluded from the analysis because they failed the validity check items, had unrealistically short completion time (less than 10 minutes) or had more than 25% missing data, resulting in data on 251 to be used for analyses. Linear trend at point was used to impute missing data in two cases for the item "I am not interested in abstract ideas." from the IPIP (0.8% missing). Next, the means, standard deviations, and zero-order correlations between all study variables were calculated to examine their relationships (see Table 2). Then, the assumptions for multiple regression were examined. Because the variance D and high-lowD were highly correlated (r = .93), multicollinearity was an issue, although other assumptions of regression were met. Thus, separate regression models for each index of work values D were completed.

Work Values Differentiation

For hypothesis 1, multiple hierarchical linear regression was conducted to examine the prediction of career maturity (H1a; Hypothesis 1a) and career indecision (H1b) from the three different indices of values differentiation; traditional high-low D (H1a1 & H1b1), Iachan D (H1a2 & H1b2), and variance D (H1a3 & H1b3). On step 1, the covariates PSC (private self-consciousness) and MC-C (social desirability) were entered into the regression equation. On step 2, one of the three differentiation indices was entered into the regression equation.

Results for career maturity, after controlling for covariates of PSC and MC-C, found that high-lowD [ΔF (3, 247) = .05, $p > .05$, $\Delta r^2 = .00$], Iachan D [ΔF (3, 247) =

2.06, $p > .05$, $\Delta r^2 = .01$] and variance D [ΔF (3, 247) = 1.07, $p > .05$, $\Delta r^2 = .00$] were not significant predictors of CMI scores. Thus, hypothesis 1a was not supported. The covariate MC-C was a significant predictor in each of the three models ($p < 0.001$, β = .25 for H1a1 & H1a3, β = .24 for H1a2) while the other covariate PSC ($p > 0.05$) was not.

Results for career indecision, after controlling for covariates of PSC and MC-C, found that neither high-lowD [ΔF (3, 247) = .00, $p > .05$, $\Delta r^2 = .00$] nor variance D [ΔF (3, 247) = 1.57, $p > .05$, $\Delta r^2 = .01$] were significant predictors of CDDQ scores. Iachan D [ΔF (3, 247) = 4.82, $p < .05$, $\Delta r^2 = .02$, β = .13] was a significant positive predictor of career indecision but because it was hypothesized that Iachan D would be a negative predictor, hypothesis 1b was not supported. Again, the covariate MC-C was a significant predictor in each of the three models ($p < 0.001$, β = -.25 for H1b1 & H1b3, β = -.24 for H1b2) while the other covariate PSC ($p > 0.05$) was not.

Work Values Profile Elevation

For hypothesis 2, multiple hierarchical linear regression was conducted again to examine whether work values profile elevation (PE) positively predicted extraversion (Hypothesis 2a1), openness (H2a2), career certainty (H2a3), and negatively predicted neuroticism (H2b1), depression (H2b2) and career indecision (H2b3). The covariate MC-C was a significant predictor of career certainty ($p < .001$, β = .28), neuroticism ($p < .001$, β = -.44), depression ($p < .001$, β = -.31), and CDDQ scores ($p < .001$, β = -.23) while PSC was a significant predictor of openness ($p < .001$, β = .32) and CDDQ scores ($p < .001$, β = .14). After controlling for covariates of PSC and MC-C, the results showed that PE was a significant positive predictor of extraversion [ΔF (3, 247) = 7.04, $p < .01$, Δr^2 =

.03, β = .17] and openness [ΔF (3, 247) = 9.51, p < .01, Δr^2 = .03, β = .19] as hypothesized, but was not a significant predictor of career certainty [ΔF (3, 247) = 3.35, p > .05, Δr^2 = .01]. Thus, hypothesis 2a was partially supported. For hypothesis 2b, the results found that PE was a significant negative predictor of depression [ΔF (3, 247) = 11.03, p < .01, Δr^2 = .04, β = -.20] and career indecision [ΔF (3, 247) = 7.26, p < .01, Δr^2 = .03, β = -.17] as hypothesized but not a significant predictor of neuroticism [ΔF (3, 247) = .02, p > .05, Δr^2 = .00]. Thus, hypothesis 2b was also partially supported.

Interactions between Differentiation and Profile Elevation

Because none of the three indices of work values D were significant predictors of career maturity, there was no justification to further test the moderating effect of PE on the relationship between work values D and career maturity to test hypothesis 3. Therefore, hypothesis 3 was not confirmed.

For hypothesis 4, multiple hierarchical linear regression was performed to examine the moderating effect of PE on the relationship between Iachan D and career indecision. Iachan D was selected because it was the only significant predictor of career indecision. The method of examining moderation via hierarchical multiple regression outlined by Frazier, Tix, and Barron (2004) was used. Before conducting the analyses, Iachan D and PE were centered using the sample mean. On step 1, the covariates PSC and MC-C were entered into the regression equation. On step 2, the centered predictor variable Iachan D and the moderator variable PE were entered into the regression equation although neither of the mains effects were significant (p > 0.05). On step 3, the interaction term of Iachan D × PE was added. After controlling for covariates PSC and MC-C, a significant interaction between Iachan D and PE [ΔF (5, 245) = 4.99, p < .05,

Δr^2 = .02, β = .15] was found, as predicted. Results of this analysis are shown in Table 3. These results suggest that PE moderates the relationship between the Iachan D and career indecision. Further probing this interaction, the simple slopes for 1 SD above and below the mean for PE were examined and plotted (see Figure 1). CDDQ scores were more strongly related to Iachan D scores among participants with above average PE (+1 SD *SS* = 1.60, $p < .001$, 95% CI [.72, 2.49]). In contrast, CDDQ scores were not significantly related to Iachan D scores among participants with low PE (-1 SD *SS* = .02, $p > .05$, 95% CI [-.91, .95]) or average PE (Mean, *SS* = .81, $p > .05$, 95% CI [-.08, 1.7]).

To further examine the interaction between Iachan D and PE, the moderating effect of Iachan D on the relationship between PE and indecision was also examined given that previous literature on interests has interchanged PE and D as moderators. The simple slopes analysis (see Figure 2) showed that CDDQ scores were more strongly related to PE scores among participants with below average Iachan D (-1 SD *SS* = -.06, $p < .01$, 95% CI [-.10, -.01]). In contrast, CDDQ scores were not significantly related to PE scores among participants with high (+1 SD *SS* = .02, $p > .05$, 95% CI [-.03, .06]) or average Iachan D (Mean, *SS*= -.02, $p > .05$, 95% CI [-.06, .02]).

CHAPTER IV – DISCUSSION

The findings of this study suggest that after controlling for private self-consciousness and social desirability, work values differentiation (high-low, Iachan & variance) is not related to career maturity but Iachan D appears to be a modest positive predictor of career indecision while high-low D and variance D are not. In addition, work values PE seems to be a modest positive predictor of extraversion and openness and a negative predictor of depression and career indecision while being unrelated to career certainty and neuroticism. Moreover, a significant interaction was found between Iachan D and work values PE in their relationships to career indecision, such that work values PE negatively predicts indecision only when Iachan D is low.

Work Values Differentiation

Finding that High-lowD and VarD were not significant predictors of career indecision is consistent with the previous research on interest differentiation that has consistently failed to find evidence for relationships between the two. Alvi et al., (1990) recommended using Iachan D index for research on differentiation because it captures the shape of the profile better than traditional high-low differentiation index. Their recommendation was supported by the current study given that Iachan D did have a significant relationship with career indecision while high-lowD and VarD index did not. It suggests that the index chosen for work values D does make a difference. In contrast, none of the three indices of differentiation were significant predictors of career maturity, suggesting that work values differentiation is indeed unrelated to career maturity.

Interestingly, differentiation was originally hypothesized to have a negative relationship with indecision because more refined work values were thought to facilitate

career decisions (Brown, 2002). However, a positive relationship was found. One potential explanation for this finding is that with more defined values, people experience more difficulties in deciding on a career, maybe because matching values are limited. In other words, because they are looking to fit a specific set of values, it becomes more difficult to identify a specific occupation that reinforces these values. Moreover, those with less defined values, who express that all values are equally important, endorsed less indecision possibly because of the increased number of career options that may reinforce at least one of these highly important needs. Put another way, it may be that highly differentiated values may actually decrease flexibility in selecting a career path. This is partially supported by the negative correlation between differentiation and openness, for all three differentiation indices (Table 2). Although these correlations were non-significant, they all trend toward negative direction, indicating a consistent negative relationship between the two.

Work Values Profile Elevation

PE of work values, similar to PE of interests, was a significant positive predictor of personality traits such as openness and extraversion and a negative predictor of depression. Consistent with the previous research on interests PE and the present study's hypotheses, this result suggests that elevation of values, similar to elevation of interests, signals individuals who are overall more open to experiences (openness) and outgoing, (extraversion) and report few depressive symptoms.

In contrast, PE of work values was not a significant predictor of neuroticism and career certainty. For neuroticism, the result is consistent with previous literature on interest elevation and neuroticism finding the two are either modestly correlated

(Gottfredson & Jones, 1993) or not significantly correlated at all (Holland, Johnston, & Asama, 1994; Fuller, Holland, & Johnston, 1999). Thus, it is concluded that work values PE, similar to interests PE, is unrelated to neuroticism.

As for career certainty, the previous research has found associations between profile elevation of work values and career certainty (Schulenberg & Vondracek, 1993) but the current study did not find such a relationship. The inconsistent findings may be due to the lack of consistency in the measurement of career certainty and researchers' use of their own measures, which make the comparisons between studies difficult. The present study found initial favorable psychometric evidence for the use of six items to assess career certainty. More studies using these items in different populations and context are required to further clarify the relationship between career certainty and work values PE.

Consistent with expectations, work values PE was negatively related to career indecision, suggesting that if a person considers many aspects of work values as highly important, less indecision is also reported. One explanation of the result is that when work values PE is high, individuals may feel it is likely easier for some of the most important work needs to be met, which reduces difficulties in making career decisions. Moreover, examining the relationship between work values PE and certainty may provide more insight into this relationship. While on the surface career indecision and certainty seem like bipolar dimensions of the same construct, data from the current study suggests that this is not the case. Firstly, the correlation between the two was -.57, suggesting they are related but not identical constructs. Secondly, career indecision was negatively related to work values PE while career certainty was not when covariates were considered.

However, the bivariate correlation between profile elevation and career certainty ($r = .16$, $p < .05$) suggests some relationship between the two. Thus, higher work values PE may be related to reduced indecision, but not necessarily being decided.

Interactions between Differentiation and Profile Elevation

Work values profile elevation moderated the positive relationship between Iachan D and indecision. More specifically, more refined work values (i.e., higher differentiation) relate to increased indecision only when work values PE is high. This result fits well with the speculation that one possible reason why Iachan D and indecision were positivity related is that highly refined work values may reduce the flexibility in identifying possible career paths, leading to career decision. When the highly defined values are also highly endorsed, these individuals may be more inflexible or more passionate about these particular values being met by their future career, which may lead to more indecision.

Alternatively, Iachan D was found to moderate the relationship between work values PE and indecision. For those with relatively higher differentiation (+1 SD), profile elevation did not affect the relationship with career indecision. However, for those with relatively lower differentiation (-1SD), a negative relationship was found between profile elevation and indecision. These results suggest that when individuals have values that are poorly defined and lowly elevated they report higher indecision and when values are poorly defined, yet highly endorsed, they report less indecision. This result is consistent with previous studies on interactions between interest D and PE (Hirschi & Lage, 2007; Swanson & Hansen, 1986), reporting that among subjects with low interest differentiation (undifferentiated subjects), those with high profile elevation, compared to

those with low profile elevation, reported high career readiness identity, decidedness, planning and career exploration. The results imply that higher elevation is actually helpful for both values and interests even when interests and values are not differentiated because the person is reporting interests and needs in a lot of areas and thus it's more likely that they will find a career path that fits some of their interests and needs well.

Lastly, while work values differentiation alone was significantly related to indecision in earlier analyses, when work values differentiation and elevation were examined together with the interaction term, they were no longer significant while the interaction term was. Thus, the results indicate when differentiation and profile elevation are considered together, it is the interaction between them that drives the relationship with indecision, not elevation or differentiation by themselves, suggesting consideration of both elevation and differentiation of work values is needed to understand how they affect career decision-making.

Implications for Practice

The findings from this study suggest that indecision is closely related to both work values differentiation (Iachan index) and profile elevation. Firstly, the positive relationship between differentiation and indecision does not necessarily mean that having refined values is disadvantageous. In contrast, it is likely to be advantageous because prioritized values make it easy to narrow down possible career options to consider and may eventually lead to better matching careers and consequently higher job satisfaction. However, this is based on the premise that the person is aware of his/her most important set of needs and utilize this knowledge to find matching careers by utilizing resources such as O*NET (www.onetonline.org) to generate a list of jobs matching his/her specific

value profile. Thus, for those with well-defined work values, career counseling is recommended to help develop awareness about one's values and connect one's most important needs to possible careers with the help of counselors (Brown, 2002; Dawis & Lofquist, 1984). Secondly, when people report low differentiation, having higher elevated values can guard against potential indecision. In contrast, individuals with low differentiation and also low endorsement are likely to need the most assistance in terms of intervention. These clients may benefit from additional mental health screening to rule out possible depressive symptoms that are related to lower elevated work values. Afterwards, counselors can help clients to realize some aspects of the work that are important to the person by exploring and examining the reasons behind low endorsements of work values statements.

Implications for Research

The current study is the first study that comprehensively examined work values differentiation and profile elevation of work values. Therefore, more research is needed to verify the findings. In addition, possible next steps for further study are investigating whether work values differentiation and profile elevation moderate the relationship between work values congruence (i.e., the match between person's values and the actual jobs) and job satisfaction. Although, increased work values differentiation may contribute to increased difficulties in the initial career planning process, it is still unknown whether more refined work values will eventually lead to better match between person's values and the actual jobs and consequently higher job satisfaction. Another possibility is that people with highly differentiated values may need to have the "perfect" fit in their job to be satisfied and thus will have less congruence and consequently lower job satisfaction.

In other words, does differentiation moderate the relationship between value congruence and job satisfaction and if yes, in which direction?

In addition, it seems reasonable to infer that work values profile elevation will moderate the relationship between work values congruence and satisfaction because people with more highly elevated values are more likely to have found something that matching some of their values and thus are more satisfied at work. Thus, future research should investigate whether work values differentiation and profile elevation moderate the relationship between work values congruence and job satisfaction.

The finding that only Iachan D showed significant relationship with indecision while high-low D and variance did not, suggests that the Iachan D is probably a better index for differentiation, than traditional high-low, probably because high-low D does not account for the scores in the middle between the highest and lowest value scores while Iachan D utilizes the highest, second highest and fourth highest scores and thus better captures the shape of the overall profile. The variance D is, in theory, the perfect reflection of the profile differentiation and it is unclear why a relationship with indecision was not found as predicted. At this point, the current results suggest that Iachan D is more related to indecision than other two indices of differentiation. Thus, in the future, research on work values and even interest differentiation research should consider using Iachan D index.

Lastly, the utility of the Likert version of the WIP in research is evidenced by meaningful relationships found in the current study, however examination of correlations between the Likert version and the traditional rank-order form should be examined in the future as evidence for concurrent validity.

Limitations and Future Research

Data were collected in an educational institute among students seeking credit for a psychology course. This could have led to restriction of range of certain variables. For example, only about half of the participants reported being employed. Consequently, these students may only have limited work experiences and thus have not yet solidified their work values through work experiences, resulting in unstable work values. Thus, further research based on non-college students are required to shed more light on this area of study.

Moreover, this is a correlational study and as such, findings do not tease apart whether differentiation or elevation of work values cause indecision. Thus, longitudinal studies with high school and college students, such as the study by Hirschi (2009) examining interest differentiation and elevation and finding factors contributing (e.g., gender, personality traits and career exploration) to the development of the interest differentiation and elevation, may help clarify the causal relationships. In addition, longitudinal data collected through the course of career counseling practice will provide strong evidence showing how work values differentiation and profile elevation as well as career related variables such as career indecision and maturity change in the course of counseling and how these variables relate to each other in real life settings.

Conclusions

The present study is the first study systematically examining work values profile elevation and differentiation. It was found that work values differentiation calculated with Iachan Index was positively related to career indecision. In addition, work values profile elevation was positively related to extraversion and openness and a negative predictor of

depression and career indecision. Furthermore, interactions between work values differentiation (Iachan D) and profile elevation suggest that low differentiation relates to decreased indecision if values are also highly elevated.

APPENDIX A – Table A1

Table A1.

Values and Needs on the MIQ

MIQ Work Values	Corresponding Needs
Achievement	ability utilization, achievement
Comfort	activity, independence, variety, compensation, security, work conditions
Status	advancement, recognition, authority, social status
Altruism	coworkers, social service, moral values
Safety	company policies, supervision-human, supervision-technical
Autonomy	creativity, responsibility

APPENDIX B – Table A2

Table A2.

Alphas and Correlations between Study Variables

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 High-low Differentiation 2	†														
2 Variance Differentiation	.93**	†													
3 Iachan Differentiation	.70**	.58**	†												
4 Profile Elevation	-.47**	-.38**	-.51**	.91											
5 Private Self-Consciousness	-.03	-.03	-.00	.25**	.77										
6 Social Desirability	-.10	-.02	-.10	.12	-.07	.68									
7 Career Maturity	-.04	.06	-.11	.13*	-.09	.25**	.76								
8 Career Indecision	.02	-.07	.16*	-.16*	.113	-.26**	-.62**	.95							
9 Neuroticism	-.06	-.04	.10	-.07	-.01	-.43**	-.32**	-.39**	.83						
10 Extraversion	-.19**	-.12	-.16**	.19**	.07	.11	.24**	-.23**	-.46**	.89					
11 Openness	-.09	-.10	-.04	.27**	.37**	.04	-.03	-.06	-.02	.14*	.81				
12 Agreeableness	.00	.02	-.08	.28**	.14*	.52**	.19**	-.26**	-.36**	.07	.17**	.85			
13 Conscientiousness	-.06	-.01	-.12	.27**	.13*	.45**	.39**	-.41**	-.45**	.21**	.09	.54**	.88		
14 Depression	.18**	.12	.25**	-.24**	-.02	-.33**	-.30**	.34**	.59**	-3.13**	-.03	-.43**	-.43**	.92	
15 Career Certainty	.02	.11	-.01	.16*	.05	.29**	.66**	-.57**	-.31**	.18**	.07	.24**	.42**	-.26**	.95
M	1.68	.55	.30	34.20	17.21	7.25	13.18	3.46	25.83	33.25	35.96	38.51	37.35	4.04	34.11
SD	.93	.53	.23	4.97	4.86	2.84	4.14	1.38	7.96	8.69	7.19	6.83	7.75	4.67	8.88

Note: Alphas for each measure are included on the diagonal where applicable.

** Correlation is significant at the .01 level (2-tailed).

APPENDIX C – Table A3

Table A3.

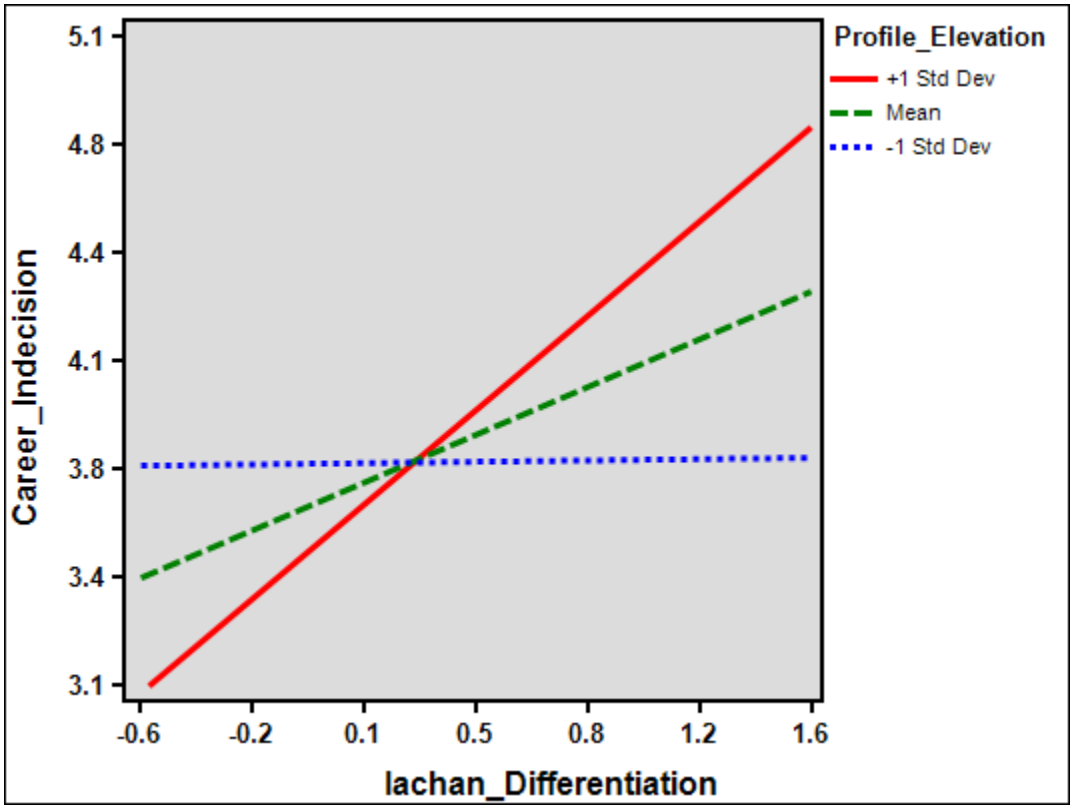
Hierarchical Multiple Regression results

	Indecision	
	B	*β*
Block 1.	F (2, 248) = 9.91*** Δr^2 = .07	
PSC	.03	.10
Social Desirability	-.12	-.25***
Block 2.	ΔF (4, 246) = 4.08* Δr^2 =.03	
PSC	.04	.13*
Social Desirability	-.11	-.22***
PE	-.04	-.13
Iachan D	.20	.07
Block 3.	ΔF (5, 245) = 4.99* Δr^2 =.02	
PSC	.04	.13*
Social Desirability	-.10	-.21**
PE	-.02	-.08
Iachan D	.41	.14
PE x Iachan D	.08	.15*

Note: Hierarchical Multiple Regression results for the moderating effect of work values profile elevation on the relationship between work values differentiation (Iachan) and indecision. * = $p < .05$, ** = $p < .01$, *** = $p < .001$

APPENDIX D – Figure A1

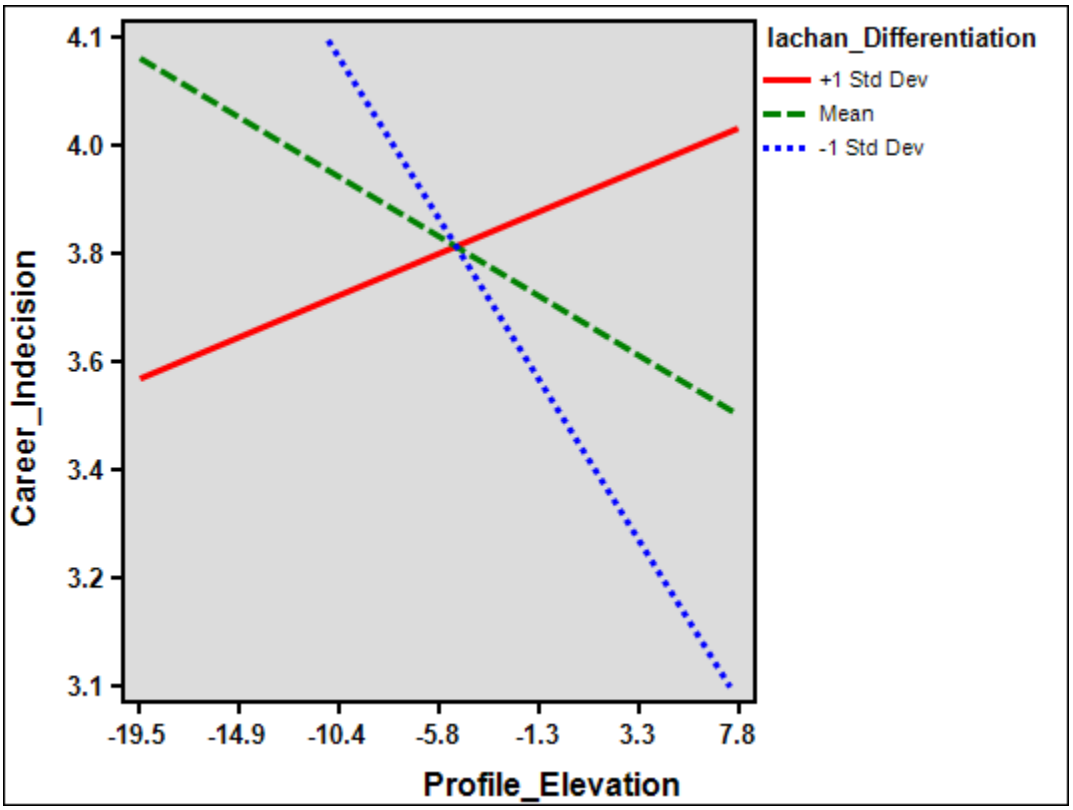
Figure A1. The moderating effect of work values profile elevation.



Note: The moderating effect of work values profile elevation on the relationship between work values differentiation (Iachan) and indecision.

APPENDIX E – Figure A2

Figure A2. The moderating effect of work values differentiation (Iachan).



Note: The moderating effect of work values differentiation (Iachan) on the relationship between work values profile elevation and indecision.

APPENDIX F – IRB Approval Letter

THE UNIVERSITY OF
SOUTHERN MISSISSIPPI

INSTITUTIONAL REVIEW BOARD
118 College Drive #5147 | Hattiesburg, MS 39406-0001
Phone: 601.266.5997 | Fax: 601.266.4377 | www.usm.edu/research/institutional.review.board

NOTICE OF COMMITTEE ACTION

The project has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services (45 CFR Part 46), and university guidelines to ensure adherence to the following criteria:

- The risks to subjects are minimized.
- The risks to subjects are reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered regarding risks to subjects must be reported immediately, but not later than 10 days following the event. This should be reported to the IRB Office via the "Adverse Effect Report Form".
- If approved, the maximum period of approval is limited to twelve months.
  Projects that exceed this period must submit an application for renewal or continuation.

PROTOCOL NUMBER: 12345678
PROJECT TITLE: How to Achieve IRB Approval at USM
PROJECT TYPE: New Project
RESEARCHER(S): Jonas Doe
COLLEGE/DIVISION: College of Education and Psychology
DEPARTMENT: Psychology
FUNDING AGENCY/SPONSOR: N/A
IRB COMMITTEE ACTION: Expedited Review Approval
PERIOD OF APPROVAL: 01/02/2015 to 01/01/2016
Lawrence A. Hosman, Ph.D.
Institutional Review Board

APPENDIX G – Consent Form

ORI | Office of Research Integrity

INSTITUTIONAL REVIEW BOARD

LONG FORM CONSENT

LONG FORM CONSENT PROCEDURES
This completed document must be signed by each consenting research participant. • The Project Information and Research Description sections of this form should be completed by the Principal Investigator before submitting this form for IRB approval. • Signed copies of the long form consent should be provided to all participants. Last Edited August 28th, 2014

Today's date: December 18, 2016		
PROJECT INFORMATION		
Project Title: What do work value differentiation and profile elevation predict?		
Principal Investigator: Jinhao Chi, B.A.	Phone: 612-860-1117	Email: jinhao.chi@usm.edu
College: Education and Psychology	Department: Counseling Psychology	

RESEARCH DESCRIPTION

1. **Purpose**:

You are invited to participate in a study measuring work value profiles and related outcomes. You were selected as a possible participant because you are a current undergraduate college student. We ask that you read this form before agreeing to be in the study. The researchers conducting this study are Jinhao Chi, Doctoral student in Counseling Psychology, who is supervised by Dr. Melanie Leuty from the University of Southern Mississippi, Department of Psychology.

2. **Description of Study:**

The purpose of the current project is to examine the relationship between work value profiles and important outcomes. To do so, you will be asked to respond to a number of questions about your personality, preferences, and career development. Quality assurance checks will be used to make sure that participants are reading each question carefully and answering thoughtfully. Participants who do not pass these checks will NOT receive credit for completing the study.

3. **Benefits:**

You most likely will not experience any benefits. However, you may find that responding to questions about your preferences increases your self-awareness.

4. **Risks:**

The risks associated with your participation are minimal. You may find that a few questions are sensitive in nature (e.g., questions about depression and anxiety), which may result in some distress. In addition, some questions may be difficult or tiring to answer. You may refuse to answer any question without penalty.

5. **Confidentiality:**

The records of this study will be kept private. After the study has been completed, a unique number will be

assigned to your information. In any sort of report that might be published from this data, no information will be included that will make it possible to identify a participant. Research records will be stored securely on computer devices and only the researchers involved in this study will have access to the research records.

6. **Alternative Procedures:**

Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with the University of Southern Mississippi or the Department of Psychology. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

7. **Participant's Assurance:**

This project has been reviewed by the Institutional Review Board, which ensures that research projects involving human subjects follow federal regulations.

Any questions or concerns about rights as a research participant should be directed to the Chair of the IRB at 601-266-5997. Participation in this project is completely voluntary, and participants may withdraw from this study at any time without penalty, prejudice, or loss of benefits.

Any questions about the research should be directed to the Principal Investigator using the contact information provided in Project Information Section above.

CONSENT TO PARTICIPATE IN RESEARCH

Participant's Name: _____

Consent is hereby given to participate in this research project. All procedures and/or investigations to be followed and their purpose, including any experimental procedures, were explained to me. Information was given about all benefits, risks, inconveniences, or discomforts that might be expected.

The opportunity to ask questions regarding the research and procedures was given. Participation in the project is completely voluntary, and participants may withdraw at any time without penalty, prejudice, or loss of benefits. All personal information is strictly confidential, and no names will be disclosed. Any new information that develops during the project will be provided if that information may affect the willingness to continue participation in the project.

Questions concerning the research, at any time during or after the project, should be directed to the Principal Investigator with the contact information provided above. This project and this consent form have been reviewed by the Institutional Review Board, which ensures that research projects involving human subjects follow federal regulations. Any questions or concerns about rights as a research participant should be directed to the Chair of the Institutional Review Board, The University of Southern Mississippi, 118 College Drive #5147, Hattiesburg, MS 39406-0001, (601) 266-5997.

I consent to participate in this study, in doing so I am agreeing that:
1. I am at least 18 years of age,
2. I am being asked to complete a set of questionnaires, which will take about 60 minutes and for which I will receive either 1 SONA credit or the amount of extra credit that was communicated to me by my course instructor in a participating course.
3. I must view the entire survey and pass quality assurance checks in order to receive compenstation for my participation in this research.
4. All information I provide will be used for research purposes and will be kept confidential

I understand that my participation in this research is voluntary. If I decide to participate in the study, I may withdraw my consent and stop participating at any time without penalty or loss of benefits to which I am otherwise entitled.

assigned to your information. In any sort of report that might be published from this data, no information will be included that will make it possible to identify a participant. Research records will be stored securely on computer devices and only the researchers involved in this study will have access to the research records.

6. **Alternative Procedures:**

Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with the University of Southern Mississippi or the Department of Psychology. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

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Participant's Name: _____

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The opportunity to ask questions regarding the research and procedures was given. Participation in the project is completely voluntary, and participants may withdraw at any time without penalty, prejudice, or loss of benefits. All personal information is strictly confidential, and no names will be disclosed. Any new information that develops during the project will be provided if that information may affect the willingness to continue participation in the project.

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I consent to participate in this study, in doing so I am agreeing that:
1. I am at least 18 years of age,
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3. I must view the entire survey and pass quality assurance checks in order to receive compenstation for my participation in this research.
4. All information I provide will be used for research purposes and will be kept confidential

I understand that my participation in this research is voluntary. If I decide to participate in the study, I may withdraw my consent and stop participating at any time without penalty or loss of benefits to which I am otherwise entitled.

APPENDIX H Demographic Questionnaire

DEMOGRAPHIC QUESTIONNAIRE

Please provide the following demographic information.

Age:_____ **Date of Birth:** _____ **Sex**: O Female O Male

Race/Ethnicity:

O Alaskan Native
O American Indian
O Asian American
O Black or African American
O Hispanic/Latino
O White or Caucasian
O Native Hawaiian
O Pacific Islander
O Multicultural

Years in College:

O 1 (Freshman
O 2 (Sophomore)
O 3 (Junior)
O 4 (Senior)
O 5+
O Graduate/Professional Student

Relationship Status:

O Single/Never Married
O In a committed relationship
O In a committed relationship and living together
O Engaged/Married
O Divorced/Separated
O Widowed

Have you declared a major?

O Yes
If yes, what is your declared major?
_____

O No
If no, what majors are you considering?
_____

Please indicate the highest degree your parent(s) earned.

Parent 1

O Some High School
O High School Diploma/GED
O Some College
O Associates Degree
O Technical/Vocational Certificate
O Bachelors Degree
O Masters Degree
O Doctoral Degree
O Other:_____

Parent 2

O Some High School
O High School Diploma/GED
O Some College
O Associates Degree
O Technical/Vocational Certificate
O Bachelors Degree
O Masters Degree
O Doctoral Degree
O Other:_____

Please list your current overall GPA at USM: _____

Please estimate your family's annual income.

$ _____ per year.

Are you currently employed?

O Yes
If yes, how many hours do you work?
_____

O No

APPENDIX I Work Importance Profiler

For the statements below, use the following rating scale to indicate how important this aspect is to you in your ideal job. There are no right or wrong answers in this survey; you are just being asked how you feel. Answer as honestly and carefully as you can.

1 = Least important

4= Moderately important

7 =Extremely important

On my ideal job, it is important that...

1. I make use of my abilities.

2. The work could give me a feeling of accomplishment.

3. I could be busy all the time.

4. The job would provide an opportunity for advancement.

5. I could give directions and instructions to others.

6. I could plan my work with little supervision.

7. My co-workers would be easy to get along with.

8. I would be treated fairly by the company.

9. My pay would compare well with that of other workers.

10. I could try out my own ideas.

11. I would never be pressured to do things that go against my sense of right and wrong.

12. I could work alone.

13. I could receive recognition for the work I do.

14. I could make decisions on my own.

15. The job would provide for steady employment.

16. I could do things for other people.

17. I would be looked up to by others in my company and my community.

18. I have supervisors who would back up their workers with management.

19. I would have supervisors who train their workers well.

20. I could do something different every day.

21. The job would have good working conditions.

APPENDIX J International Personality Item Pool

Describe yourself as you generally are now, not as you wish to be in the future. Describe yourself as you honestly see yourself, in relation to other people you know of the same sex as you are, and roughly your same age. So that you can describe yourself in an honest manner, your responses will be kept in absolute confidence.

Indicate for each statement whether it is

1. Very Inaccurate,
2. Moderately Inaccurate,
3. Neither Accurate Nor Inaccurate,
4. Moderately Accurate,
5. Very Accurate as a description of you.

1. Often feel blue.
2. Dislike myself.
3. Am often down in the dumps.
4. Have frequent mood swings.
5. Panic easily.
6. Rarely get irritated.
7. Seldom feel blue.
8. Feel comfortable with myself.
9. Am not easily bothered by things.
10. Am very pleased with myself.

11. Feel comfortable around people.

12. Make friends easily.

13. Am skilled in handling social situations.

14. Am the life of the party.

15. Know how to captivate people.

16. Have little to say.

17. Keep in the background.

18. Would describe my experiences as somewhat dull.

19. Don't like to draw attention to myself.

20. Don't talk a lot.

21. Believe in the importance of art.

22. Have a vivid imagination.

23. Tend to vote for liberal political candidates.

24. Carry the conversation to a higher level.

25. Enjoy hearing new ideas.

26. Am not interested in abstract ideas.

27. Do not like art.

28. Avoid philosophical discussions.

29. Do not enjoy going to art museums.

30. Tend to vote for conservative political candidates.

31. Have a good word for everyone.

32. Please select…

33. Believe that others have good intentions.

34. Respect others.

35. Accept people as they are.

36. Make people feel at ease.

37. Have a sharp tongue.

38. Cut others to pieces.

39. Suspect hidden motives in others.

40. Get back at others.

41. Insult people

42. Am always prepared.

43. Pay attention to details.

44. Get chores done right away.

45. Carry out my plans.

46. Make plans and stick to them.

47. Waste my time.

48. Find it difficult to get down to work.

49. Do just enough work to get by.

50. Don't see things through.

51. Shirk my duties.

APPENDIX K Career Decision Difficulties Questionnaire (CDDQ).

You will be presented with a list of statements concerning the career decision-making process. You will be asked to indicate the extent to which each statement describes you on a 1-9 scale (1- does not describe me, 9 - describes me well).

Have you considered what field you would like to major in or what occupation you would like to choose?

Yes / No

If so, to what extent are you confident of your choice?

Not confident at all 1 2 3 4 5 6 7 8 9 Very confident

Next, you will be presented with a list of statements concerning the career decision-making process. Please rate the degree to which each statement applies to you on the following scale:

Does not describe me 1 2 3 4 5 6 7 8 9 Describes me well

Circle 1 if the statement does not describe you and 9 if it describes you well. Of course, you may also circle any of the intermediate levels.

Please do not skip any question.

For each statement, please circle the number which best describes you.

1. I know that I have to choose a career, but I don't have the motivation to make the decision now ("I don't feel like it").

Does not describe me 1 2 3 4 5 6 7 8 9 Describes me well

2. Work is not the most important thing in one's life and therefore the issue of choosing a career doesn't worry me much.

Does not describe me 1 2 3 4 5 6 7 8 9 Describes me well

3. I believe that I do not have to choose a career now because time will lead me to the "right" career choice.

Does not describe me 1 2 3 4 5 6 7 8 9 Describes me well

4. It is usually difficult for me to make decisions.

Does not describe me 1 2 3 4 5 6 7 8 9 Describes me well

5. I usually feel that I need confirmation and support for my decisions from a professional person or somebody else I trust.

Does not describe me 1 2 3 4 5 6 7 8 9 Describes me well

6. I am usually afraid of failure.

Does not describe me 1 2 3 4 5 6 7 8 9 Describes me well

7. I like to do things my own way.

Does not describe me 1 2 3 4 5 6 7 8 9 Describes me well

8. I expect that entering the career I choose will also solve my personal problems.

Does not describe me 1 2 3 4 5 6 7 8 9 Describes me well

9. I believe there is only one career that suits me.

Does not describe me 1 2 3 4 5 6 7 8 9 Describes me well

10. I expect that through the career I choose I will fulfill all my aspirations.

Does not describe me 1 2 3 4 5 6 7 8 9 Describes me well

11. I believe that a career choice is a one-time choice and a life-long commitment.

Does not describe me 1 2 3 4 5 6 7 8 9 Describes me well

12. I always do what I am told to do, even if it goes against my own will.

Does not describe me 1 2 3 4 5 6 7 8 9 Describes me well

13. I find it difficult to make a career decision because I do not know what steps I have to take.

Does not describe me 1 2 3 4 5 6 7 8 9 Describes me well

14. I find it difficult to make a career decision because I do not know what factors to take into consideration.

Does not describe me 1 2 3 4 5 6 7 8 9 Describes me well

15. I find it difficult to make a career decision because I don't know how to combine the information I have about myself with the information I have about the different careers.

Does not describe me 1 2 3 4 5 6 7 8 9 Describes me well

16. I find it difficult to make a career decision because I still do not know which occupations interest me.

Does not describe me 1 2 3 4 5 6 7 8 9 Describes me well

17. I find it difficult to make a career decision because I am not sure about my career preferences yet (for example, what kind of a relationship I want with people, which working environment I prefer).

Does not describe me 1 2 3 4 5 6 7 8 9 Describes me well

18. I find it difficult to make a career decision because I do not have enough information about my competencies (for example, numerical ability, verbal skills) and/or about my personality traits (for example, persistence, initiative, patience).

Does not describe me 1 2 3 4 5 6 7 8 9 Describes me well

19. I find it difficult to make a career decision because I do not know what my abilities and/or personality traits will be like in the future.

Does not describe me 1 2 3 4 5 6 7 8 9 Describes me well

20. I find it difficult to make a career decision because I do not have enough information about the variety of occupations or training programs that exist.

Does not describe me 1 2 3 4 5 6 7 8 9 Describes me well

21. I find it difficult to make a career decision because I do not have enough information about the characteristics of the occupations and/or training programs that interest me (for example, the market demand, typical income, possibilities of advancement, or a training program's perquisites).

Does not describe me 1 2 3 4 5 6 7 8 9 Describes me well

22. I find it difficult to make a career decision because I don't know what careers will look like in the future.

Does not describe me 1 2 3 4 5 6 7 8 9 Describes me well

23. I find it difficult to make a career decision because I do not know how to obtain additional information about myself (for example, about my abilities or my personality traits).

Does not describe me 1 2 3 4 5 6 7 8 9 Describes me well

24. I find it difficult to make a career decision because I do not know how to obtain accurate and updated information about the existing occupations and training programs, or about their characteristics.

Does not describe me 1 2 3 4 5 6 7 8 9 Describes me well

25. I find it difficult to make a career decision because I constantly change my career preferences (for example, sometimes I want to be self-employed and sometimes I want to be an employee).

Does not describe me 1 2 3 4 5 6 7 8 9 Describes me well

26. I find it difficult to make a career decision because I have contradictory data about my abilities and/or personality traits (for example, I believe I am patient with other people but others say I am impatient).

Does not describe me 1 2 3 4 5 6 7 8 9 Describes me well

27. I find it difficult to make a career decision because I have contradictory data about the existence or the characteristics of a particular occupation or training program.

Does not describe me 1 2 3 4 5 6 7 8 9 Describes me well

28. I find it difficult to make a career decision because I'm equally attracted by a number of careers and it is difficult for me to choose among them.

Does not describe me 1 2 3 4 5 6 7 8 9 Describes me well

29. I find it difficult to make a career decision because I do not like any of the occupation or training programs to which I can be admitted.

Does not describe me 1 2 3 4 5 6 7 8 9 Describes me well

30. I find it difficult to make a career decision because the occupation I am interested in involves a certain characteristic that bothers me (for example, I am interested in medicine, but I do not want to study for so many years).

Does not describe me 1 2 3 4 5 6 7 8 9 Describes me well

31. I find it difficult to make a career decision because my preferences cannot be combined in one career, and I do not want to give any of them up (e.g., I'd like to work as a free-lancer, but I also wish to have a steady income).

Does not describe me 1 2 3 4 5 6 7 8 9 Describes me well

32. I find it difficult to make a career decision because my skills and abilities do not match those required by the occupation I am interested in.

Does not describe me 1 2 3 4 5 6 7 8 9 Describes me well

33. I find it difficult to make a career decision because people who are important to me (such as parents or friends) do not agree with the career options I am considering and/or the career characteristics I desire.

Does not describe me 1 2 3 4 5 6 7 8 9 Describes me well

34. I find it difficult to make a career decision because there are contradictions between the recommendations made by different people who are important to me about the career that suits me or about what career characteristics should guide my decisions.

Does not describe me 1 2 3 4 5 6 7 8 9 Describes me well

Finally, how would you rate the degree of your difficulty in making a career decision? Low 1 2 3 4 5 6 7 8 9 High

APPENDIX L Career Certainty

Please indicate the extent to which each statement describes you on a 1-7 scale (1- does not describe me, 7 - describes me well).

1. I have made up my mind on a career.
2. I feel certain about my career choice.
3. I am committed to my career decision.
4. I have made up my mind on a major.
5. I feel certain about the major I selected.
6. I am committed to my major.

APPENDIX M Self Consciousness Scale

Please answer the following questions about yourself by clicking on 0, 1, 2 or 3. For each of the statements, indicate how much each statement is like you by using the following scale:

3= a lot like me

2= somewhat like me

1= a little like me

0= not like me at all

Please be as honest as you can throughout, and try not to let your responses to one question influence your response to other questions. There are no right or wrong answers.

1. I'm always trying o figure myself out.

4. I think about myself a lot.

6. I often daydream about myself.

8. I never take a hard look at myself.

12. I generally pay attention to my inner feelings.

14. I'm constantly thinking about my reasons for doing things.

17. I sometimes step back (in my mind) in order to examine myself from a distance.

19. I'm quick to notice change in my mood.

21. I know the way my mind works when I work through a problem.

Note: item numbers pertain to item number on the full measure.

APPENDIX N Marlowe-Crowne Social Desirability Scale Form C (MC- C).

Listed below are a number of statements concerning personal attitudes and traits. Read each item and decide whether the statement is True or False as it pertains to you personally.

1. It is sometimes hard for me to go on with my work if I am not encouraged. True / False
2. I sometimes feel resentful when I don't get my way. True / False
3. On a few occasions, I have given up doing something because I thought too little of my ability. True / False
4. There have been times when I felt like rebelling against people in authority even though I knew they were right. True / False
5. No matter who I'm talking to, I'm always a good listener. True / False
6. There have been occasions when I took advantage of someone. True / False
7. I'm always willing to admit it when I make a mistake. True / False
8. I sometimes try to get even rather than forgive and forget. True / False
9. I am always courteous, even to people who are disagreeable. True / False
10. I have never been irked when people expressed ideas very different from my own. True / False
11. There have been times when I was quite jealous of the good fortune of others. True / False
12. I am sometimes irritated by people who ask favors of me. True / False
13. I have never deliberately said something that hurt someone's feelings. True / False

APPENDIX O DASS-21

Please read each statement and select 0, 1, 2 or 3, which indicates how much the statement applied to you *over the past week*. There are no right or wrong answers. Do not spend too much time on any statement.

0 = Did not apply to me at all

1 = Applied to me to some degree, or some of the time

2 = Applied to me to a considerable degree, or a good part of time

3 = Applied to me very much, or most of the time

1. I found myself getting upset by quite trivial things
2. I was aware of dryness of my mouth
3. I couldn't seem to experience any positive feeling at all
4. I experienced breathing difficulty (e.g., excessively rapid breathing, breathlessness in the absence of physical exertion)
5. I just couldn't seem to get going
6. I tended to over-react to situations
7. I had a feeling of shakiness (e.g., legs going to give way)
8. I found it difficult to relax
9. I found myself in situations that made me so anxious I was most relieved when they ended
10. I felt that I had nothing to look forward to
11. I found myself getting upset rather easily
12. I felt that I was using a lot of nervous energy
13. I felt sad and depressed
14. I found myself getting impatient when I was delayed in any way (e.g., lifts, traffic lights, being kept waiting)
15. I had a feeling of faintness
16. I felt that I had lost interest in just about everything
17. I felt I wasn't worth much as a person
18. I felt that I was rather touchy
19. I perspired noticeably (e.g., hands sweaty) in the absence of high temperatures or physical exertion
20. I felt scared without any good reason
21. I felt that life wasn't worthwhile

APPENDIX P Career Maturity Inventory — Form C

DIRECTIONS: There are 24 statements about choosing the kind of job or work that you will probably do when you finish school. Read each statement. If you agree or mostly agree with it, then circle agree next to it. If you disagree or mostly disagree with it, then circle disagree next to it.

1. There is no point in deciding on a job when the future is so uncertain. Agree Disagree

2. I know very little about the requirements of jobs. Agree Disagree

3. I have so many interests that it is hard to choose just one occupation. Agree Disagree

4. Choosing a job is something that you do on your own. Agree Disagree

5. I can't seem to become very concerned about my future occupation. Agree Disagree

6. I don't know how to go about getting into the kind of work I want to do. Agree Disagree

7. Everyone seems to tell me something different; as a result I don't know what kind of work to choose. Agree Disagree

8. If you have doubts about what you want to do, ask your parents or friends for advice. Agree Disagree

9. I seldom think about the job that I want to enter. Agree Disagree

10. I am having difficulty in preparing my self for the work that I want to do. Agree Disagree

11. I keep changing my occupational choice. Agree Disagree

12. When it comes to choosing a career, I will ask other people to help me. Agree Disagree

13. I’m not going to worry about choosing an occupation until I am out of school. Agree Disagree

14. I don’t know what courses I should take in school. Agree Disagree

15. I often daydream about what I want to be, but I really have not chosen an occupation yet. Agree Disagree

16. I will choose my career without paying attention to the feelings of other people. Agree Disagree

17. As far as choosing an occupation is concerned, something will come along sooner or later. Agree Disagree

18. I don’t know whether my occupational plans are realistic. Agree Disagree

19. There are so many things to consider in choosing an occupation, it is hard to make a decision. Agree Disagree

20. It is important to consult close friends and get their ideas before making an occupational choice. Agree Disagree

21. I really can’t find any work that has much appeal to me. Agree Disagree

22. I keep wondering how I can reconcile the kind of person I am with the kind of person I want to be in my occupation. Agree Disagree

23. I can’t understand how some people can be so certain about what they want to do. Agree Disagree

24. In making career choices, one should pay attention to the thoughts and feelings of family members. Agree Disagree

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