

Fall 12-10-2018

# TESTING THE STRUCTURAL INVARIANCE OF AFFECTIVE COMMITMENT ON UNETHICAL PRO-ORGANIZATIONAL BEHAVIOR ACROSS CLAN AND HIERARCHY ORGANIZATIONAL CULTURE TYPES

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TESTING THE STRUCTURAL INVARIANCE OF AFFECTIVE COMMITMENT ON  
UNETHICAL PRO-ORGANIZATIONAL BEHAVIOR ACROSS CLAN AND  
HIERARCHY ORGANIZATIONAL CULTURE TYPES

by

JULIA A. FULMORE

A dissertation submitted in partial fulfillment  
of the requirements for the degree of  
Doctor of Philosophy  
Department of Human Resource Development

Kim Nimon, Ph.D., Committee Chair

The Soules College of Business

The University of Texas at Tyler  
November 2018

The University of Texas at Tyler  
Tyler, Texas

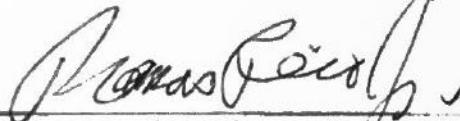
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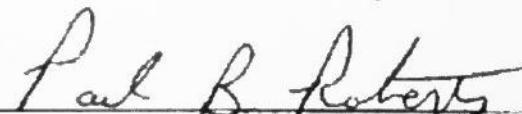
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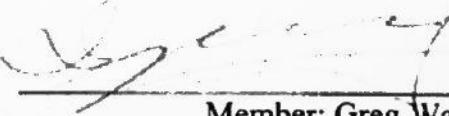
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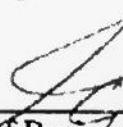
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## Dedication

I dedicate this work to my husband Dr. Anthony L. Fulmore Sr.

## Acknowledgments

I would first like to acknowledge the members of the dissertation committee who guided me throughout this project: Dr. Kim Nimon, Dr. Paul Roberts, Dr. Greg Wang, and Dr. Thomas Reio. I greatly appreciated the detailed feedback I received from my committee throughout my dissertation. Thank you for helping me grow academically and personally. I would like to give special recognition to my dissertation chair Dr. Nimon. Thank you for continuously pushing me to elevate my thinking and critically evaluate my work.

I would like to acknowledge my family. I would not have embarked on this incredible personal journey if it was not for my husband, Dr. Anthony Fulmore Sr. My children Anthony Jr. and Anna kept me going to build a better life for them. An enormous thank you also goes out to my parents, Felix and Heidrun Leimeister, who instilled in me the desire for life-long learning. Lastly, appreciation goes to my twin sister, Eva, who showed me the importance of having the determination and to never give up until you reach your goal. I would not have made it without their love and support. I am very blessed to have them in my life.

I also would like to acknowledge my peers in the doctoral program at the University of Texas at Tyler. We established a remarkable research community over the years, which I hope will continue to thrive throughout our professional careers.

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## Abstract

# TESTING THE STRUCTURAL INVARIANCE OF AFFECTIVE COMMITMENT ON UNETHICAL PRO-ORGANIZATIONAL BEHAVIOR ACROSS CLAN AND HIERARCHY ORGANIZATIONAL CULTURE TYPES

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November 2018

Unethical pro-organizational behavior (UPB) is concerned with employees' engagement in unethical conduct for the benefit of the organization that is immoral and/or illegal. Research findings on motivators of UPB show some contradictory findings that need to be resolved. Considering the empirical findings that clan culture discourages unethical behavior while hierarchy culture encourages unethical behavior along with the contradicting empirical findings between affective commitment and UPB based on samples with different cultures, this study sought to empirically assess the contradictory findings in the literature by testing the structural invariance of affective organizational commitment on UPB based on the two organizational cultures clan and hierarchy. Multi-group analysis of structural invariance (MASI) was chosen. Testing for structural invariance first required the establishment of metric measurement invariance. The study's results confirmed metric measurement invariance. As hypothesized based on prior literature, structural noninvariance was found. Testing for partial structural

invariance found a statistically significant positive path coefficient between affective commitment and UPB for the hierarchy culture while finding a statistically insignificant negative path coefficient for the clan culture. Implications to theory, research, and practice were discussed.

*Keywords:* organizational culture; organizational commitment; unethical pro-  
organizational behavior (UPB); structural invariance; measurement invariance

## Chapter 1 - Introduction

### **Background to the Problem**

The business world has felt the consequences of several scandals involving unethical behavior with Enron and WorldCom being among the most memorable (Steele & Branson, 2014). Unethical behavior is an action that “violates hypernorms, or globally held standards of ethical behavior judged in terms of justice, law, or widely held social norms” (Umphress & Bingham, 2011, p. 622). While being immoral and ultimately detrimental to the organizations and their stakeholders, some unethical acts were initially committed to benefit the organizations (Cullinan, Bline, Farrar, & Lowe, 2008; Effelsberg, Solga, & Gurt, 2014; Umphress, Bingham, & Mitchel, 2010). Unethical conduct for the benefit of the organization that is immoral and/or illegal is referred to as unethical pro-organizational behavior (UPB; Umphress & Bingham, 2011; Umphress et al., 2010). Examples of such behaviors are hiding product defects, falsifying documents, using questionable accounting practices, bribery, lying to external stakeholders, and polluting the environment (Effelsberg et al., 2014; Miao, Newman, Yu, & Xu, 2013). Unethical behavior is not only very common within organizations, but also very costly (Vardi, 2001). The business and popular news confirm the impact of unethical behavior on the business environment on a regular basis (Umphress & Bingham, 2011). A recent example is Volkswagen’s emissions scandal that not only led to high recall costs, but also deteriorated the public’s confidence in the organization (Castille, Buckner, & Thoroughgood, 2016).

## **Statement of the Problem**

Scholars state that research on UPB is underdeveloped and suggest that research is needed to test the proposed model of UPB as well as expand the model by identifying additional antecedents, mediators, and moderators at the individual, team, and organizational level (Lee, Schwarz, Newman, & Legood, 2017; Umphress & Bingham, 2011; Umphress et al., 2010). Research findings on motivators of UPB show some contradictory findings that need to be resolved. Matherne and Litchfield (2012) found a significant positive relationship of affective commitment, which is a component of organizational commitment, with UPB ( $r = .186$ ). Schutts and Shelley (2014), on the contrary, found organizational commitment, measured with a scale that solely focuses on affective commitment (Mowday, Steers, & Porter, 1979), to have a significant negative relationship with UPB ( $r = -.235$ ). The conceptual model of UPB positions amoral culture as a moderating factor between the exogenous variables positive social exchange and organizational identification and the endogenous variable neutralization (Umphress & Bingham, 2011). The significant role of culture on ethical behavior is based on Trevino's (1986) interactionist model. Empirical evidence indicates that the cultural types — clan, adhocracy, market, and hierarchy — can either encourage or discourage unethical behavior (Di Stefano, Scrima, & Parry, 2017; Pilch & Turska, 2014).

Regression analysis findings indicated that clan and adhocracy cultures discourage unethical behavior (Di Stefano et al., 2017; Pilch & Turska, 2014), while market and hierarchy cultures encourage unethical behavior (Di Stefano et al., 2017; Pilch & Turska, 2014). Unethical behavior might be discouraged due to the focus on cooperation and teamwork in clan cultures as well as the focus on responsibility in

adhocracy cultures (Di Stefano et al., 2017; Pilch & Turska, 2014). Unethical behavior might be encouraged due to the focus on competitiveness in market cultures and due to the bureaucratic structures in hierarchy cultures (Di Stefano et al., 2017; Pilch & Turska, 2014). In addition, the placement of the culture along the flexibility versus stability continuum may be a factor in encouraging or discouraging unethical behavior (Di Stefano et al., 2017; Pilch & Turska, 2014). While the clan and adhocracy culture types focus on flexibility and therefore discourage unethical behavior, the hierarchy and market culture types focus on stability and consequently encourage unethical behavior (Di Stefano et al., 2017; Pilch & Turska, 2014).

The two UPB studies that assessed affective organizational commitment and its relationships with UPB used different samples from different organizations (Matherne & Litchfield, 2012; Schutts & Shelley, 2014). Organizational culture might explain the contradicting results of these two studies. The significant positive relationship of affective organizational commitment with UPB was found with a sample of restaurant workers, a type of organization that commonly exhibits a hierarchy culture (Cameron & Quinn, 2005; Matherne & Litchfield, 2012). In contrast, the significant negative relationship of affective organizational commitment with UPB was found with a sample of fraternity/sorority students who commonly exhibit a clan culture (Cameron & Quinn, 2005; Schutts & Shelley, 2014). Considering the empirical findings that a clan culture discourages unethical behavior while a hierarchy culture encourages unethical behavior, along with the contradicting empirical findings between affective commitment and UPB based on samples with different cultures, this study sought to provide a quantitative confirmation of the conceptual model of UPB (Umphress & Bingham, 2011; Umphress et

al., 2010) by testing the structural invariance of affective organizational commitment on UPB based on the two organizational cultures clan and hierarchy. Structural invariance is defined as the equality of “unstandardized coefficients for direct effects” across groups (Kline, 2016, p. 420).

### **Purpose of the Study**

The purpose of the present study was to empirically assess the structural invariance of affective organizational commitment on UPB across the two organizational cultural types clan and hierarchy. The population of interest included nonmanagement full-time U.S. employees between the ages of 18 and 54 working at organizations in the service sector with either clan or hierarchy culture as their dominant culture. Testing for structural invariance first required the establishment of measurement invariance (Kline, 2016; Meredith, 1993; Schumacker & Lomax, 2016; Teo et al., 2009; Vandenberg & Lance, 2000; Van de Schoot, Lugtig, Hox, 2012). Measurement invariance by organizational culture (i.e., clan and hierarchy) was assessed in a two-step process including configural and metric invariance (Cheung & Lau, 2011; Vandenberg & Lance, 2000). Once measurement invariance was confirmed, structural invariance was tested by assessing whether differences in the structural paths between the cultural types were statistically and practically significantly different. Structural noninvariance was expected to be found for affective organizational commitment and UPB based on the two organizational cultures clan and hierarchy. The structural noninvariance was assumed based on a hypothesized positive path coefficient between affective commitment and UPB for the hierarchy culture and a negative path coefficient for the clan culture (Matherne & Litchfield, 2012; Schutts & Shelley, 2014). Once the expected lack of

structural invariance was confirmed, testing for partial structural invariance was conducted.

### **Conceptual Framework**

Three conceptual frameworks underpinned this study: (a) UPB; (b) organizational culture, and (c) affective organizational commitment. The research on UPB was introduced by Umphress et al. (2010). Unethical pro-organizational behavior is concerned with employees' engagement in unethical conduct for the benefit of the organization that is immoral and/or illegal (Umphress & Bingham, 2011; Umphress et al., 2010). Unethical pro-organizational behavior consists of intentional pro-organizational behaviors that are exhibited at employees' discretion and are not directly recognized by the organization's formal reward system (Umphress & Bingham, 2011; Umphress et al., 2010). Unethical pro-organizational behavior initially has a positive effect on the organization's performance (Umphress & Bingham, 2011; Umphress et al., 2010). Unethical conduct regarding UPB is based on societal norms and the law rather than organizational norms and organizational rules (Umphress & Bingham, 2011). The pro-organizational aspect comes into play as the employees engage in unethical conduct with the explicit intention to help their organization, which often occurs at the expense of the stakeholders (Umphress & Bingham, 2011; Umphress et al., 2010).

Organizational culture consists of embedded values and assumptions that influence the behavior of organizational members (Schein, 1985). The thoughts, the decision-making, and the actions of organizational members are influenced by organizational culture (Lok & Crawford, 2004; Schein, 1990). Organizational culture plays a significant role in ethical behavior and either motivates or controls unethical

behavior (Trevino, 1986; Vardi, 2001). Based on this literature, the conceptual model of UPB included culture as a moderator (Umphress & Bingham, 2011). The competing values framework (CVF) distinguishes between four unique culture types based on organizational core values: (a) clan culture; (b) adhocracy culture; (c) hierarchy culture; and (d) market culture (Cameron & Quinn, 2005). Clan cultures have a strong internal focus as well as an emphasis on flexibility and teamwork that encourages strong organizational commitment and involvement (Cameron & Quinn, 2005). Adhocracy cultures are highly flexible with an external focus to quickly adapt to changes in the competitive environment (Cameron & Quinn, 2005). Market cultures value stability and control while focusing on the external environment to achieve a competitive advantage (Cameron & Quinn, 2005). Hierarchy cultures have an internal focus on stability and control with an emphasis on efficiency that is driven by specialization and high process orientation (Cameron & Quinn, 2005).

Organizational commitment is defined as an employee's psychological attachment to an organization that increases their interest in remaining with the organization (Allen & Meyer, 1996; Meyer & Allen, 1991; Meyer, Allen, & Smith, 1993). The psychological attachment refers to the attitudinal components of employees' identification with the organization (Allen & Meyer, 1996; Meyer & Allen, 1991). The three-component model of organizational commitment considers three dimensions of organizational commitment, which include (a) affective commitment, (b) normative commitment, and (c) continuance commitment (Meyer & Allen, 1991; Meyer et al., 1993). Normative commitment refers to the employees' feelings of obligation to stay with the organization (Meyer & Allen, 1991). Continuance commitment reflects the employees' awareness of the cost

associated with leaving the organization (Meyer & Allen, 1991). Affective commitment focuses on employees' psychological attachments to their organizations as it is defined as employees' identification and emotional attachments with as well as involvement in the organization that makes employees want to remain with the organization (Meyer & Allen, 1991). When organizational identification is high, individuals internalize organizational failures and successes as their own (Ashforth & Mael, 1989). The pressure of a strong internalization of organizational failures and successes, such as it is the case with affective commitment, can influence individual willingness to engage in UPB (Umphress & Bingham, 2011).

### **Research Hypotheses**

The research hypotheses were derived from contradictory findings in the literature that this study sought to address. Matherne and Litchfield (2012) found a significant positive relationship of affective commitment with UPB ( $r = .186$ ). In contrast, Schutts and Shelley (2014) found organizational commitment, measured with a scale that solely focuses on affective commitment (Mowday et al., 1979), to have a significant negative relationship with UPB ( $r = -.235$ ). However, these two studies did not take organizational culture into consideration, which is a moderating factor between the exogenous variables positive social exchange and organizational identification and the endogenous variable neutralization in the conceptual model of UPB (Umphress & Bingham, 2011). The significant role of culture on ethical behavior is based on Trevino's (1986) interactionist model. Empirical evidence indicates that clan and adhocracy cultures discourage unethical behavior, while market and hierarchy cultures encourage unethical behavior (Di Stefano et al., 2017; Pilch & Turska, 2014). The two UPB studies

that assessed affective organizational commitment and their relationships with UPB used samples from different organizations. While one sample was drawn from an organization that commonly exhibits a hierarchical culture, the other sample was drawn from an organization that commonly exhibits a clan culture (Cameron & Quinn, 2005; Matherne & Litchfield, 2012; Schutts & Shelley, 2014). The different organizational cultures might explain the contradicting results. Therefore, the two organizational cultures (i.e., clan and hierarchy) were chosen because they represent the cultures of the UPB study samples that indicated conflicting results (Cameron & Quinn, 2005; Matherne & Litchfield, 2012; Schutts & Shelley, 2014). In addition, the study solely focused on affective organizational commitment due to the two contradictory UPB studies that only focused on the affective commitment component of organizational commitment. In summation, this study sought to test the structural invariance of affective organizational commitment on UPB based on the clan and hierarchy organizational cultures.

Multi-group analysis of structural invariance (MASI) was utilized to assess whether the structural weights between the constructs (i.e., affective organizational commitment and UPB) were equivalent across the different cultural types clan and hierarchy (Deng et al., 2005; Kline, 2016; Schumacker & Lomax, 2016; Teo et al., 2009). Testing for MASI first required the establishment of measurement invariance (Kline, 2016; Meredith, 1993; Schumacker & Lomax, 2016; Teo et al., 2009; Van de Schoot et al., 2012) to ensure that the survey measures “identical constructs with the same structure across different groups” (Van de Schoot et al., 2012, p. 486). Once measurement invariance was established, structural invariance was tested by assessing whether differences in the structural paths between the cultural types were statistically and

practically significant (Deng et al., 2005; Kline, 2016; Schumacker & Lomax, 2016; Teo et al., 2009). Multi-group structural invariance is given when the comparison between an unconstrained (i.e., structural paths are allowed to vary between the groups) and a constrained structural model (i.e., structural paths are set to be equal between the groups) yields a nonsignificant statistical and practical difference (Deng et al., 2005; Hirschfeld & Brown, 2009; Kline, 2016; Schumacker & Lomax, 2016).

Based on the following literature findings, structural noninvariance was expected to be found for affective organizational commitment and UPB based on the two organizational cultures (i.e., clan and hierarchy). First, contradictory research findings on UPB indicated a negative relationship for a clan culture sample while indicating a positive relationship for a hierarchy culture sample (Matherne & Litchfield, 2012; Schutts & Shelley, 2014). Second, the support in the literature was that clan culture discourages unethical behavior while hierarchy culture encourages unethical behavior (Di Stefano et al., 2017; Pilch & Turska, 2014). To assess whether organizational culture can influence the relationship between affective organizational commitment and UPB based on the MASI method, which required the determination of measurement invariance as a prerequisite, the following hypotheses were tested:

*Hypothesis 1: The assessed constructs will have the same meaning across the cultural groups of clan and hierarchy as indicated by metric measurement invariance.*

*Hypothesis 2: There will be a difference in the structural relationship between affective organizational commitment and UPB by organizational*

*culture due to a positive path coefficient for the hierarchy culture and a negative path coefficient for the clan culture.*

### **Overview of the Design of the Study**

This quantitative study used a multi-wave design by collecting anonymous data at three points in time (see Table 1). Respondents' data across the three waves were matched via the MTurk® WorkerID. An online survey method with Qualtrics® was used to design, deploy, and collect the data. Participants were recruited on Amazon Mechanical Turk (MTurk®). MTurk® is an online survey distribution platform that connects researchers with respondents and has been used for several studies on UPB (Castille et al., 2016; Chen, Chen, & Sheldon, 2016; Graham, Ziegert, & Capitano, 2015). In addition, MTurk® has been found to be a method of data collection that is as valid and reliable as traditional methods such as American college samples and convenience samples while producing more diverse samples (Behrend, Sharek, Meade, & Wiebe, 2011; Berinsky, Huber, & Lenz, 2012; Buhrmester, Kwang, & Gosling, 2011; Feitosa, Joseph, & Newman, 2015; Landers & Behrend, 2015). Furthermore, the results of a pilot study (see Appendix A) indicated that access to an employee group working at organizations with clan culture and a comparable employee group working at organizations with hierarchy culture was possible using MTurk®. MTurk® respondents were provided links to the surveys on Qualtrics® for the completion of the three anonymous surveys that collected the data in sequential order (see Table 1).

Table 1

*Three-Wave Study Design*

<b>Survey 1 at Time 1</b>	<b>Survey 2 at Time 2</b>	<b>Survey 3 at Time 3</b>
Demographics	UPB	UPB
Work Characteristic	Organizational Culture	
	Affective Commitment	
	Social Desirability	

The first survey, Survey 1, at time 1 was a screening survey to identify respondents that met the sample requirements by collecting demographic and work characteristic information. The targeted sample, based on the findings of the pilot study, was nonmanagement full-time U.S. employees between the ages of 18 and 54 working at organizations in the service sector with either clan or hierarchy culture. While screening for employment and nonmanagement status, age, and industry was conducted in Survey 1, respondents' information on their organizational culture, was collected in Survey 2. Respondents' organizational culture was identified based on their answer to the Organizational Culture Assessment Instrument (OCAI, Cameron & Quinn, 2005). Organizational culture was the grouping variable in the assessment of structural invariance of affective organizational commitment on UPB.

Survey 2, at time 2, was only sent to qualified workers based on their responses to Survey 1 and included the items for the independent variable affective commitment, the moderator organizational culture, the dependent variable UPB, and a measure for social desirability to control for social desirability response bias (Castille et al., 2016; Podsakoff, MacKenzie, Lee, & Podsakoff, 2003; Podsakoff, MacKenzie, & Podsakoff, 2012).

Responses for the dependent variable UPB were collected a second time in Survey 3 at time 3 to avoid the common method bias regarding measurement context due to collecting the independent variable and the dependent variable at the same point in time (Podsakoff et al., 2003). In case not enough data were collected in Survey 3, the UPB data collected in Survey 2 were to be used as a backup.

The surveys consisted of previously validated scales, the UPB scale by Umphress et al. (2010), the OCAI by Cameron and Quinn (1999), the affective commitment subscale of the three-component model of organizational commitment by Meyer et al. (1993), and a short version of Paulhus' (1991) impression management subscale of the balanced inventory of desirable responding to control for social desirability response bias (Castille et al., 2016; Chen et al., 2016; Umphress et al., 2010). The impression management subscale represents the traditional view of social desirability response bias and assesses whether “subjects are purposefully tailoring their answers to create the most positive social image” (Paulhus, 1991, p. 21). Additional questions included screening questions, bot checks, instructional manipulation checks (IMCs), and demographics.

Once the data were collected, it was cleaned and assessed for statistical assumptions. The statistical software packages R® 3.5.0 and IBM® SPSS® AMOS 25.0.0 were used to conduct the data analyses. The data analysis included construct validity, confirmatory factor analysis (CFA) to assess measurement invariance, and structural modeling to assess structural invariance. The demographic data were used to assess sample representativeness of the population and to ensure group equivalency.

## **Significance of the Study**

This study has significant implications for research and practice. Contributions to research were made by assessing cultural conditions within which affective organizational commitment encourages or discourages UPB (Cullinan et al., 2008; Matherne & Litchfield, 2012; Umphress et al., 2010). The conceptual model of UPB theorized culture as a moderating factor (Umphress & Bingham, 2011), but no empirical research on UPB has been conducted that evaluated culture as a moderator. The study evaluated the concept of UPB by empirically assessing the contradictory findings between affective organizational commitment and UPB based on organizational culture (Matherne & Litchfield, 2012; Schutts & Shelley, 2014).

The study partially addressed the call for more rigorous research methodology in the field of human resource development (HRD; Reio, 2010; Nimon & Reio, 2012). The study applied a rigorous research design and utilized the appropriate statistical methodologies to establish empirical evidence of structural noninvariance between the two cultural groups of clan and hierarchy. Di Stefano et al. (2017), as well as Pilch and Turska (2014), did not establish measurement invariance before comparing the effect of the four cultural types on the type of unethical behavior that they assessed. The comparison across groups without establishing measurement invariance threatens the interpretability and validity of empirical results (Nimon & Reio, 2011; Vandenberg & Lance, 2000). This study first established metric level measurement invariance of UPB and affective commitment across the two organizational cultures clan and hierarchy before testing for structural invariance (Cheung & Lau, 2011; Vandenberg & Lance, 2000). By assessing measurement invariance of UPB and affective commitment across

two cultural types, the study also added to the measurement literature. In addition, the study added to the structural invariance literature by providing empirical evidence that the structural relationship between affective commitment and UPB varied across the two types of organizational culture. Moreover, the unethical behavior that Di Stefano et al. (2017) as well as Pilch and Turska (2014) assessed was not UPB. Therefore, the study added to the research on organizational culture by testing whether the cultural type differences also hold for affective commitment on UPB. Furthermore, the study added to the research on UPB that has not yet received enough empirical support (Lee et al., 2017; Umphress & Bingham, 2011; Umphress et al., 2010) by testing the structural invariance of affective organizational commitment on UPB across the two organizational cultures of clan and hierarchy that has not been empirically tested within the UPB research.

The study is significant to practitioners by contributing to the knowledge base in human resource development (HRD) as it addresses unethical employee behavior that can threaten organizations' success and diminish the public's confidence in organizations (Castille et al., 2016). Ethical employee behavior is critical for organizations' long-term success (Vardi, 2001). Organizational members are continuously pressured to produce results that satisfy stakeholders, which can encourage unethical behavior such as UPB (Castille et al., 2016; Gilley, Boughton, & Maycunich, 1999). Unethical pro-organizational behavior is a result of employees' actions aimed at a short-term gain at the expense of long-term organizational health (Umphress & Bingham, 2011; Umphress et al., 2010).

Organizations and managers take an important part in the creation of an ethical work environment (Di Stefano et al., 2017). While organizations and managers

encourage employee commitment to the organization, it is important to understand that increased organizational commitment is not limited to just positive outcomes (Matherne & Litchfield, 2012). In addition, it is important for organizations and managers to understand that certain types of organizational cultures encourage UPB. The findings of the study inform organizations and managers which organizational cultures encourage committed employees to engage in UPB and which organizational cultures discourage committed employees from engaging in UPB. Such knowledge is important to organizations and managers to know whether UPB could be an issue in their organization based on its culture. This knowledge will allow organizations and managers to monitor and address potential issues concerning UPB appropriately, especially since empirical evidence indicates the possibility of a contagion effect of UPB (Xiaocun, 2015). The contagion effect of UPB is defined as the effect of coworkers' UPB that influences employees' UPB (Xiaocun, 2015). When individuals exhibit high levels of organizational identification, a positive relationship has been found between individuals UPB and that of their co-workers (Xiaocun, 2015).

The study also is significant to the field of organizational development and change management (OD/CM). Organizations and managers can take the findings of the study into consideration for a change of the organizational culture. If the current organizational culture encourages UPB in committed employees, the findings of the study provide information on which cultures discourage UPB in committed employees. In addition, the findings of the study provide information for managers who currently navigate through an organizational change process to assess whether the new target culture encourages UPB in committed employees and be alert for such behavior.

## **Assumptions**

Two assumptions were made for the purpose of this study. First, the survey respondents diligently answered the survey questions for their affective organizational commitment, organizational culture, and willingness to engage in UPB to be assessed appropriately. Second, the survey respondents truthfully answered the survey questions of the UPB scale without being influenced by social desirability bias (Podsakoff et al., 2003; Triki, Cook, & Bay, 2015; Zerbe & Paulhus, 1987). These concerns were mitigated by survey design considerations that ensured anonymity, requests to answer the questions honestly, and a user-friendly layout. In addition, the tested model included a control for social desirability response bias.

## **Delimitations**

The study had several delimitations. First, the study only assessed two types of organizational culture based on the competing values framework, which were clan and hierarchy. The two organizational cultures (i.e., clan and hierarchy) were chosen because they represent the cultures of the UPB study samples that indicated conflicting results (Cameron & Quinn, 2005; Matherne & Litchfield, 2012; Schutts & Shelley, 2014).

Second, the study solely focused on affective commitment due to the two contradictory UPB studies that only focused on the affective commitment component of organizational commitment. The study only assessed affective commitment based on the three-component model of organizational commitment (Allen & Meyer, 1996; Meyer & Allen, 1991; Meyer et al., 1993). The affective commitment subscale (Meyer et al., 1993) was chosen, because it was used by one of the studies on organizational commitment and UPB (Matherne & Litchfield, 2012) and because its affective

commitment component is a refined version of the second organizational commitment measure that was used in the UPB literature (Ghosh & Swamy, 2014; Meyer & Allen, 1991).

Third, the study solely focused on U.S. employees. Ethics encompasses “the principles, norms, and standards of conduct governing an individual or group” (Trevino & Nelson, 2011, p. 19). Limiting the geographic environment to the United States ensured that the answers for the UPB scale were answered based on the same societal principles and norms (Umphress & Bingham, 2011).

Fourth, the study solely focused on service sector employees. The service sector was chosen based on information from the Bureau of Labor Statistics (BLS) that indicated that the service sector constitutes the largest industry sector in the United States. A total of 86.7% of employees are working in this sector (BLS, 2017a). In addition, the service sector represents the restaurant workers of one of the UPB study samples that indicated conflicting results (Matherne & Litchfield, 2012). The other UPB study that indicated conflicting results sampled fraternity/sorority students who most likely will work in the service sector upon completion of their degrees (Schutts & Shelley, 2014).

Fifth, the study solely focused on nonmanagement employees. Focusing on nonmanagers was of interest as the two studies on UPB on which this study was based assessed primarily nonmanagers. The sample of restaurant workers consisted of 86.6% nonmanagers and the sample of fraternity/sorority students consisted of 100% nonmanagers (Matherne & Litchfield, 2012; Schutts & Shelley, 2014).

Sixth, the study solely focused on full-time employees. Full-time employees were of interest because they constitute 88.7% of the employed population in the United States (BLS, 2017b). Lastly, employees had to be in the 18-54 age group. Workers in this age group encompass the generational cohorts Generation X and Millennials (Fry, 2015). These two generational cohorts are currently the largest in the labor force (Fry, 2015).

The delimitations regarding the assessed population were so specific because testing for structural invariance requires equivalent groups (Vandenberg & Lance, 2000). Equivalent groups ensure that all demographics equally affect both assessed groups. The granular demographics assessed in this study ensured that the creation of two equivalent groups was possible.

### **Definitions of Terms**

The following terms and definitions are relevant to this proposal:

- Adhocracy culture: Highly flexible with an external focus to quickly adapt to changes in the competitive environment (Cameron & Quinn, 2005).
- Affective commitment: Employees' identification and emotional attachment with as well as involvement in the organization that makes employees want to remain with the organization (Meyer & Allen, 1991).
- Clan culture: Strong internal focus valuing flexibility and teamwork as well as strong organizational commitment and involvement (Cameron & Quinn, 2005).
- Ethics: Ethics encompasses "the principles, norms, and standards of conduct governing an individual or group" (Trevino & Nelson, 2011, p. 19).

- Hierarchy culture: Internal focus on stability and control with an emphasis on efficiency that is driven by specialization and a high process orientation (Cameron & Quinn, 2005).
- Market culture: Valuing stability and control while focusing on the external environment to achieve a competitive advantage (Cameron & Quinn, 2005).
- Organizational Commitment: “A psychological link between the employee and his or her organization that makes it less likely that the employee will voluntary leave the organization” (Allen & Meyer, 1996, p. 252).
- Organizational Culture: "A pattern of shared basic assumptions that the group learned as it solved its problems of external adaptation and internal integration, that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems" (Schein, 1985, p. 19).
- Unethical behavior: “The behavior violates hypernorms, or globally held standards of ethical behavior judged in terms of justice, law, or widely held social norms” (Umphress & Bingham, 2011, p. 622).
- Unethical pro-organizational behaviors (UPB): “Unethical behaviors conducted by employees to potentially benefit the organization” (Umphress, Bingham, & Mitchell, 2010, p. 769).

### **Chapter Summary and Organization of the Proposal**

This study was organized into five logical chapters. Chapter 1 presents the introduction and background to the problem, statement of the problem, purpose of the study, conceptual frameworks, research hypotheses, overview of the design, significance

of the study, assumptions, delimitations, definitions, and concludes with the organization of the proposal.

Chapter 2 contains the review of relevant literature to the study. The topics include the concept of ethics with an overview of major theories and models of ethical decision-making, UPB, UPB and organizational culture, UPB and organizational commitment, and hypotheses support.

Chapter 3 presents the methodology the study employed, including the purpose of the study, research hypotheses, overview of the pilot study, design of the study, population and sample, measurement instruments, survey design, data collection, and data analysis. A summary concludes chapter 3.

Chapter 4 reports the results of the data analysis for the study. Chapter 5 provides the discussion of results, implications, limitations, as well as suggestions for future research. Lastly, supplemental information is provided in the appendices.

## Chapter 2 - Literature Review

### **Introduction**

In this chapter, the concept of UPB is further defined along with literature on organizational culture and organizational commitment in the context of UPB. The literature review is organized into five sections. In the first section, the concept of ethics and major theories and models of ethical decision-making are discussed to increase the understanding of the concept of UPB. In the second section, the concept of UPB is reviewed along with a review of the empirical studies on UPB. Sections three and four review relevant literature on organizational culture and organizational commitment in the context of UPB. The fifth section provides support for the research hypotheses that were addressed in this study.

The EBSCOhost Databases Academic Search Complete, Business Source Complete, and PsycINFO of the Robert R. Muntz Library at The University of Texas at Tyler during the date range of June 2017 to the present were utilized with Google® Scholar as a secondary resource. The following search terms or combination of terms were used: unethical pro-organizational behavior, ethics, organizational ethics, ethical decision-making, business ethics, organizational culture, and organizational commitment. In an effort to capture seminal literature, no specific date range of materials was imposed to search peer-reviewed journal articles. Relevant articles were chosen based on the review of the title and the abstract.

## **Concept of Ethics**

Ethics is one of the oldest fields of study and has its origin in philosophy (Christensen, Peirce, Hartman, Hoffman, & Carrier, 2007). Ethics encompasses “the principles, norms, and standards of conduct governing an individual or group” (Trevino & Nelson, 2011, p. 19). Research in business ethics focuses on business decisions and seeks to understand the guiding principles, rules, personality traits, and other factors that drive such decisions (Jones, 1991; Koh & Boo, 2001; Trevino, 1986; Vitell & Davis, 1990). Ethical decision-making is a process that individuals are confronted with when making a choice to either behave unethically or make ethical decisions that are legal and conform to societal moral values (Jones, 1991). In contrast, unethical decisions lead to behavior that is either illegal or violates widely accepted social norms (Jones, 1991; Umphress & Bingham, 2011).

The next section discusses major theories and models that are relevant to ethical decision-making within organizations: Kohlberg’s (1984) six stages of moral reasoning, Rest’s (1986) four-component model, Trevino’s (1986) interactionist model, and Jones’ (1991) issue-contingent model. These are the theories and models on which the conceptual model of UPB is based. The review of these theories and models of ethical decision-making is provided to increase the understanding of the concept of UPB discussed afterward.

### **Six Stages of Moral Reasoning**

Kohlberg’s (1984) six stages of moral reasoning are based on the notion that moral reasoning progressively matures. This model was built on Piaget’s cognitive development model that linked levels of moral reasoning to preoperational, concrete

operational, and formal operation reasoning (Kohlberg, 1984). Moral reasoning is the process by which individuals and institutions evaluate what is morally right or wrong (Bailey, 2011; Lourenço, 2014). Stages 1 and 2 are combined under the pre-conventional level, as both stages focus on moral reasoning based on egoism and the fear of being punished or caught (Kohlberg, 1984). The next level is the conventional level, which includes Stages 3 and 4 (Kohlberg, 1984). At this level, moral reasoning is based on societal norms as well as a literal understanding of the rules (Kohlberg, 1984). The final level is the post-conventional level, which includes Stages 5 and 6 (Kohlberg, 1984). At this level, moral reasoning is based on a sense of responsibility and fairness (Kohlberg, 1984). The post-conventional level of moral reasoning is achieved by only a small number of people (Kohlberg, 1984).

Kohlberg's (1984) model has been criticized for its gender bias since it is based on empirical data collected from 84 boys (Gilligan, 1993). Gilligan (1993) argued that the stages of cognitive moral development differ between males and females. Males are more likely to base their moral standards on rights and rules and are thus more likely to assume a formal and abstract viewpoint (Gilligan, 1993). Females, in contrast, are more likely to base their moral standards on taking responsibility for others and thus to assume a viewpoint founded on relational context (Gilligan, 1993). As such, females seldom make moral choices according to Kohlberg's sixth stage but are more likely to operate according to Kohlberg's third stage (Gilligan, 1993). Therefore, Kohlberg's model creates the perception that females are ethically deficient (Gilligan, 1993).

Based on the notion that age influences ethical behavior, several UPB studies included age as a control variable (Castille et al., 2016; Effelsberg et al., 2014;

Kalshoven, van Dijk, & Boon, 2016; Lee et al., 2017; Matherne & Litchfield, 2012; Tian & Peterson, 2016; Umphress et al., 2010; Xiaocun, 2015). However, age has not been found to be a significant control variable for UPB (Castille et al., 2016; Effelsberg et al., 2014; Kalshoven et al., 2016; Lee et al., 2017; Matherne & Litchfield, 2012; Tian & Peterson, 2016; Umphress et al., 2010; Xiaocun, 2015). In contrast, considering the gender bias and controlling for gender, two UPB studies found that females were less likely to engage in UPB ( $\beta = -.17, p \leq .05$ ; Kalshoven et al., 2016;  $\beta = -15, p \leq .01$ ; Tian & Peterson, 2016).

### **Four-Component Model**

Rest's (1986) four-component model is a description of an individual's moral decision-making as a four-step process. The first step entails identifying the existence of a moral problem and step two involves the assessment of each possible action based on its virtuousness (Rest, 1986). The third step requires choosing between the ethical or unethical options of the previously evaluated actions (Rest, 1986). Step four involves acting on the selected decision, thus the action establishes the moral character of the decision maker (Rest, 1986). In summation, when people are confronted with a moral decision, they move from "recognizing a moral issue to making a moral judgment to establishing moral intent and finally to reaching a decision" (Chen-Bo, 2011, p. 2).

Kohlberg's (1984) six stages of moral reasoning, as well as Rest's (1986) four-component model, require as a first step the purposeful determination that a moral issue is at stake. After the identification of the moral issue, Rest's four steps for moral decision-making take effect. Step two of the Rest model is strongly influenced by the individual's level of moral reasoning based on the Kohlberg model. Therefore, an

individual's awareness of committing an ethical breach depends on the individual's ability to identify the need for a moral decision as well as the individual's level of moral reasoning. Although the Kohlberg and Rest models are explanations of the process of ethical decision-making based on the individuals' level of cognitive moral development, the models fail to account for the influence of other factors on ethical decision-making, such as influences of the work environment.

The four-component model (Rest, 1986) is important seminal work on which the ethical decision-making model known as the issue-contingent model (Jones, 1991) was built. Jones' (1991) issue-contingent model, which is reviewed in more detail below, addressed ethical decision-making within the organizational context. The conceptual model of UPB concerned with ethical decision-making within organizations was built on these models. More detail on how these models influenced the conceptual model of UPB is provided in the section on the conceptual model of UPB.

### **Issue-Contingent Model**

Jones' (1991) issue-contingent model considers the moral intensity of ethical dilemmas in the process of moral decision-making. This model was built on Rest's (1986) four-stage model for ethical decision-making. Rest (1986) identified a sequence of four steps: (a) recognizing the presence of a moral issue; (b) making a moral judgment; (c) establishing moral intent; and (d) engaging in moral behavior. The issue-contingent model considers moral intensity in each of the four steps of ethical decision-making.

Moral intensity draws from social psychology and considers the magnitude of consequences, social consensus, the probability of effect, temporal immediacy, proximity, and the concentration of effect (Jones, 1991). The magnitude of consequences

is based on the sum of positive or negative effects on all parties involved that the moral behavior in question would cause (Jones, 1991). Social consensus is based on the evaluation of what degree the moral issue conforms with societal moral values (Jones, 1991). Probability of effect considers the possibility of the act in question to occur along with the severity of the predicted harm (Jones, 1991). Temporal immediacy refers to the length of time between the moral act and the onset of its consequence (Jones, 1991). Proximity is based on how closely the consequence of the moral act affects the individual making the ethical decision (Jones, 1991). Concentration of effect involves considerations of the magnitude as well as the number of individuals affected by a moral act (Jones, 1991). Moral intensity does not encompass traits of the ethical decision-makers nor does it encompass organizational factors (Jones, 1991).

Organizational factors were added separately to the model, affecting moral intent as well as moral behavior (Jones, 1991). The organizational factors considered by Jones' (1991) model encompass group dynamics, authority factors, and socialization factors. In summation, Jones' (1991) model places significant others and the social environment at the center of moral decision-making and influencing each step in the process.

Jones' (1991) issue-contingent model shows the importance of organizational factors (e.g., organizational culture) and their influence on ethical behavior within the context of the organization. While this indicates the importance of assessing whether different organizational cultures encourage or discourage UPB and thus explain contradictory research findings on organizational commitment and its relationships with UPB (Matherne & Litchfield, 2012; Schutts & Shelley, 2014), the next model provides further support on the moderating effect of organizational culture.

## **Interactionist Model**

Trevino's (1986) interactionist model combines individual variables with situational variables to determine how individuals are likely to behave in response to ethical dilemmas. The model was built on Kohlberg's (1969) cognitive moral development model for characterizing individuals' reasoning when faced with an ethical dilemma within the organizational environment. In the interactionist model, Trevino addressed the shortcomings of Kohlberg's model by adding individual and situational moderators to the relationship between cognition and ethical behavior.

With the interactionist model, Trevino (1986) proposed three distinct variables: (a) ego strength; (b) field dependence; and (c) locus of control. Individuals who measure high on ego strength are expected to be more consistent in their moral judgment as they tend to restrain from impulses and follow their convictions, in contrast to individuals who measure low on ego strength. Hence, individuals who measure high on ego strength are expected to be more consistent in their moral judgment (Trevino, 1986). Field dependence refers to individuals' use of referents as a source of information to overcome ambiguity (Trevino, 1986). Field-dependent individuals allow external social referents to guide their behavior. In contrast, field-independent individuals function with greater autonomy and as such are guided more by their moral judgment (Trevino, 1986). Lastly, locus of control refers to the amount of control an individual exerts over life events (Trevino, 1986). Individuals with an internal locus of control credit outcomes to their own behavior. Conversely, individuals with an external locus of control believe life events are beyond their control and attribute these events to fate, luck, or destiny (Trevino, 1986).

The situational moderators within Trevino's (1986) interactionist model are immediate job context, organizational culture, and characteristics of the work. An individual's susceptibility to situational moderators varies with the stage of cognitive moral development. Immediate job context was included as a moderator because organizations contribute to continuing adult moral development through specific punishments and rewards to reinforce ethical behavior (Trevino, 1986). Additionally, organizational culture provides the collective norms that guide behavior such as referent others, demands of authority figures, and responsibility for consequences also have a significant influence on ethical decision-making in organizations. Further, characteristics of the work contribute to continuing adult moral development if the work encourages role taking as well as responsibility for resolving moral dilemmas (Trevino, 1986).

Trevino's (1986) interactionist model further supports Jones' (1991) issue-contingent model regarding the importance of organizational culture and its influence on ethical behavior within the context of the organization. Hence, based on the theoretical underpinnings of the interactionist model and the issue-contingent model, the conceptual model of UPB includes culture as a moderator (Umphress & Bingham, 2011). Furthermore, empirical evidence indicates that the organizational culture types, clan, adhocracy, market, and hierarchy, can either encourage or discourage unethical behavior (Di Stefano et al., 2017; Pilch & Turska, 2014). Moreover, contradictory research findings on organizational commitment and its relationships with UPB support the importance of assessing whether different organizational cultures encourage or discourage UPB (Matherne & Litchfield, 2012; Schutts & Shelley, 2014).

## **Unethical Pro-Organizational Behavior**

The research on UPB was introduced by Umphress et al. (2010). Unethical pro-organizational behavior is concerned with employees' engagement in unethical conduct for the benefit of the organization that is immoral and/or illegal (Umphress & Bingham, 2011; Umphress et al., 2010). Unethical pro-organizational behavior consists of pro-organizational behaviors that are exhibited at the employee's discretion, are not directly recognized by the organization's formal reward system, and have initial positive effects on the organization's performance (Umphress & Bingham, 2011; Umphress et al., 2010). Unethical conduct regarding UPB is based on societal norms and the law rather than organizational norms and organizational rules (Umphress & Bingham, 2011). The pro-organizational aspect becomes evident as the employees engage in unethical conduct with the explicit intention to help their organization, which often occurs at the expense of the stakeholders (Umphress & Bingham, 2011; Umphress et al., 2010).

The explicit intention to engage in unethical conduct sets a boundary condition, as it excludes unintentional negligence as well as acts that only intend to benefit the actor alone (Umphress & Bingham, 2011; Umphress et al., 2010). Unethical pro-organizational behavior can take place in the form of falsifying information as well as withholding certain information (Umphress et al., 2010). In addition, UPB conceptually distinguishes itself from illegal corporate behavior (Baucus & Baucus, 1997) as it also includes unethical behavior that violates societal principles and norms (Umphress et al., 2010). Furthermore, UPB conceptually distinguishes itself from actions termed necessary evils that justify harm to others for a greater good (Molinsky & Margolis, 2005). Unlike UPB, "necessary evils" include ethical actions (Molinsky & Margolis,

2005; Umphress & Bingham, 2011). Moreover, UPB is conceptually distinct from the concept of deviance because UPB only focuses on societal norms while deviance also focuses on workgroup norms (Umphress & Bingham, 2011; Warren, 2003). Lastly, UPB is also conceptually distinct from organization misbehavior (Umphress & Bingham, 2011; Vardi & Weitz, 2004; Vardi & Wiener, 1996). Unlike UPB that only focuses on unethical actions that are intended to benefit the organization, organization misbehavior includes two additional dimensions: unethical behaviors that only intended to benefit the actor such as absenteeism or theft and unethical behaviors that are intended to harm someone else or the organization such as sabotaging company property (Umphress & Bingham, 2011; Vardi & Weitz, 2004; Vardi & Wiener, 1996). Unethical pro-organizational behavior's distinction from organization misbehavior, such as counterproductive work behavior, is empirically supported by identifying different pathways that underlie UPB and counterproductive work behavior (Lee et al., 2017). In summation, while there are several related concepts that address unethical behavior committed with the intent to help the organization, UPB is theoretically distinct and thus warrants further empirical exploration.

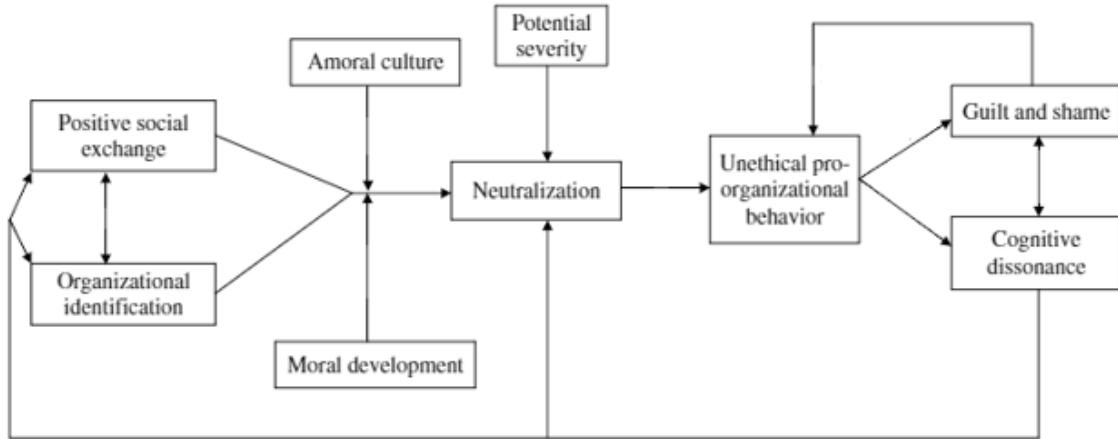
### **The Conceptual Model of UPB**

Umphress and Bingham (2011) created a conceptual model of antecedents and outcomes of UPB (see Figure 1). According to the model, the attitudinal factors of organizational identification and positive social exchange are antecedents of UPB with neutralization acting as a mediator in the relationship between organizational identification and positive social exchange with UPB (Umphress & Bingham, 2011). The situational factor of amoral culture and the dispositional factor of moral development

moderate the direct effects of organizational identification and positive social exchange with neutralization (Umphress & Bingham, 2011). Neutralization is the process of justifying unethical behavior to reduce cognitive dissonance (Umphress & Bingham, 2011). Umphress and Bingham (2011) theorized that an amoral culture increases the likelihood of neutralization, thus the likelihood of neutralization depends on the employee's level of moral development based on Kohlberg's (1984) six stages of moral reasoning. Specifically, the likelihood of neutralization increases, when the employee operates at the conventional level of moral development (Umphress & Bingham, 2011). Conversely, at the pre- and post-conventional level of moral development the likelihood of neutralization is reduced (Umphress & Bingham, 2011). The self-interest focus at the pre-conventional level prevents cognitive dissonance that would require neutralization and similarly, employees at the post-conventional level stand behind their actions, which reduces the likelihood of neutralization (Umphress & Bingham, 2011). Further, potential severity influences the possibility of neutralization before engaging in UPB as the likelihood of employees engaging in neutralization before performing UPB increases with the potential severity of the unethical behavior (Umphress & Bingham, 2011). The consequences of UPB described in the model are guilt and shame as well as cognitive dissonance (Umphress & Bingham, 2011).

The conceptual model of UPB (see Figure 1) was based on two models of ethical decision-making within organizations, Trevino's (1986) interactionist model and Jones' (1991) issue-contingent model (Umphress & Bingham, 2011). Ethical decision-making is a process individuals are confronted with when having to make a choice to either behave unethically or make ethical decisions that are legal and conform to societal moral

values (Jones, 1991). Trevino's (1986) interactionist model combines individual variables with situational variables to determine how individuals are likely to behave in response to ethical dilemmas. Trevino's (1986) interactionist model and Jones' (1991) issue-contingent model provide theoretical underpinnings for diverse situational and dispositional factors that can influence individual's willingness to engage in UPB (Umphress & Bingham, 2011).



*Figure 1. Conceptual Model of UPB (Umphress & Bingham, 2011)*

Attitudinal factors are conceptualized in the theoretical model of UPB based on the social exchange theory (Emerson, 1976) and the social identity theory (Ashforth & Mael, 1989). Social exchange theory recognizes the reciprocal relationship between two parties that is created by the voluntary exchange of resources (Emerson, 1976). While engaging in a reciprocal relationship creates trust and respect, failing to reciprocate results in distrust, denial of future exchange of resources, and other adverse actions or sanctions (Emerson, 1976). Social identity theory, as it pertains to an organizational setting, focuses on individuals' self-concepts based on organizational membership

(Ashforth & Mael, 1989). When organizational identification is high, individuals internalize organizational failures and successes as their own (Ashforth & Mael, 1989). The pressure of nurturing a reciprocal relationship or strong internalization of organizational failures and successes can influence an individual's willingness to engage in UPB (Umphress & Bingham, 2011).

### **Empirical Studies on UPB**

The research on UPB is still at an early stage with only 15 empirical studies published in peer-reviewed academic journals at the time of this review. Appendix B contains a table that summarizes the empirical studies on UPB. The original study on UPB utilized a two-study design with findings of both studies indicating a significant interaction effect between organizational identification and positive reciprocity (Umphress et al., 2010). The positive relationship between organizational identification and UPB was strengthened when positive reciprocity was high, while the direct effect between organizational identification and UPB was not significant (Umphress et al., 2010). Three additional studies assessed the interaction of organizational identification with diverse factors and their relationship with UPB (Effelsberg et al., 2014; Lee et al., 2017; Verma & Mohapatra, 2015). One additional study found a significant interaction effect between individual ethical ideology and organizational identification, but the direct effect between organizational identification and UPB was not significant (Verma & Mohapatra, 2015). Specifically, the relationship between organizational identification and UPB was weakened when the individual's ideology focused on universal morals/idealism and strengthened when the individual's ideology focused on personal values and perspectives/relativism (Verma & Mohapatra, 2015). In addition,

organizational identification was found to be an intervening variable in the positive relationship between ethical culture and UPB (Verma & Mohapatra, 2015). Another significant interaction effect was found between organizational identification and disposition towards unethical behavior by Effelsberg et al. (2014). The findings indicated a strengthening in the positive relationship between organizational identification and UPB when disposition towards unethical behavior was high (Effelsberg et al., 2014). Findings further indicated a partially intervening model with organizational identification acting as an intervening variable between transformational leadership and UPB (Effelsberg et al., 2014).

A study that assessed the interaction of organizational identification with psychological entitlement, status striving, and moral disengagement found the interaction with moral disengagement significant although only at the marginal level (Lee et al., 2017). However, further findings indicated status striving and moral disengagement fully intervene the relationship between psychological entitlement on UPB (Lee et al., 2017). In summation, while organizational identification by itself does not always show to be directly and positively linked to UPB, its interaction with positive reciprocity beliefs, moral disengagement, individual ethical ideology of relativism, and disposition towards unethical behavior significantly increases individuals' willingness to engage in UPB (Effelsberg et al., 2014; Lee et al., 2017; Umphress et al., 2010; Verma & Mohapatra, 2015).

Another line of researchers examined the relationship between diverse leadership factors and UPB (Effelsberg & Solga, 2015; Graham et al., 2015; Kalshoven et al., 2016; Miao et al., 2013; Xiaocun, 2015). Two studies assessed ethical leadership and its

relationship with UPB (Kalshoven et al., 2016; Miao et al., 2013). The first study found a curve-linear relationship between ethical leadership and UPB as well as a significant interaction effect between ethical leadership and subordinate identification with the supervisor (Miao et al., 2013). The interaction indicated a strengthening in the curve-linear relationship between ethical leadership and UPB when subordinate identification with the supervisor was high (Miao et al., 2013). In addition, controlling for the level of managerial position showed that managers at higher managerial levels were more likely to engage in UPB (Miao et al., 2013). The second study involved assessing a linear relationship between ethical leadership and UPB and found a positive yet insignificant relationship (Kalshoven et al., 2016). Further analysis indicated that there was an interaction effect with job autonomy (Kalshoven et al., 2016). When job autonomy was low, the relationship between ethical leadership and UPB was positive and significant (Kalshoven et al., 2016). However, the relationship between ethical leadership and UPB was insignificant when job autonomy was high (Kalshoven et al., 2016). In addition, when job autonomy was high, the relationship between ethical leadership and UPB was fully intervened by organizational identification (Kalshoven et al., 2016).

One study assessed the relationship between leadership styles (i.e., transactional and transformational) and UPB (Graham et al., 2015). The findings indicated an interaction between leadership style and framing condition (Graham et al., 2015). Under gain framing the levels of UPB did not differ between followers of the two types of leadership styles, transactional and transformational (Graham et al., 2015). Under loss framing, the levels of UPB for followers of transformational leaders were higher than the levels of UPB for followers of transactional leaders (Graham et al., 2015). In addition,

results indicated a three-way interaction among leadership styles, framing condition, and promotion focus (Graham et al., 2015). Further, the interactive effects of leadership style and framing condition on UPB were not significantly distinct for individuals with high promotion focus (Graham et al., 2015). However, under low promotion focus, the willingness to commit UPB was higher for followers of transformational leaders than followers of transactional leaders when loss framing was used (Graham et al., 2015).

In a study that evaluated follower-perceived transformational leadership and UPB, a significant positive relationship between leaders' organizational identification and follower-perceived transformational leadership was noted (Effelsberg & Solga, 2015). The positive relationship between follower-perceived transformational leadership and leaders' UPB was not significant (Effelsberg & Solga, 2015). The last study, while not assessing leadership styles, is still worth mentioning with this group of studies as it evaluated the influence of colleagues on UPB (Xiaocun, 2015). Findings indicated moral justification as a partially intervening variable between colleagues' UPB and individual's UPB (Xiaocun, 2015). In addition, the findings indicated that the positive relationship between colleagues' UPB and moral justification is significantly stronger when individuals exhibit high levels of organizational identification (Xiaocun, 2015). In summation, transformational leadership directly increases willingness to engage in UPB (Effelsberg et al., 2014; Graham et al., 2015) while ethical leadership was shown to have a curve-linear effect on UPB instead of a linear relationship (Kalshoven et al., 2016; Miao et al., 2013). Willingness to engage in UPB under ethical leadership is the highest when ethical leadership is at a moderate level (Miao et al., 2013). Furthermore, there is a contagion effect between colleagues' UPB on individuals' willingness to engage in UPB

(Xiaocun, 2015). The contagion effect of UPB is defined as the effect of co-workers' UPB that influences employees' UPB (Xiaocun, 2015). When individuals exhibited high levels of organizational identification, a positive relationship was found between the individuals' UPB and that of their coworkers (Xiaocun, 2015).

The next group consisted of four UPB studies that mainly focused on ethical factors via consideration of either attitudinal or dispositional factors (Castille et al., 2016; Chen et al., 2016; Kong, 2016; Tian & Peterson, 2016). One study found a significant positive relationship between Machiavellianism and UPB while no significant interaction between Machiavellianism and bottom-line mentality climate perceptions was found (Castille et al., 2016). Another study found organizational identification as the intervening variable between the positive relationship of obsessive passion and UPB (Kong, 2016). The test for moderation indicated that the relationship between obsessive passion and organizational identification was positive when mindfulness was low, but not significant and negative when mindfulness was high (Kong, 2016). The third study in this group found moral disengagement to partially intervene in the positive relationship between organizational identification and UPB (Chen et al., 2016). The test for moderation indicated that when interorganizational competition is high, the positive relationship between organizational identification and moral disengagement was stronger for individuals with high organizational identification (Chen et al., 2016). When interorganizational competition was low, the positive relationship between organizational identification and moral disengagement was similar between individuals with high or low organizational identification (Chen et al., 2016). The last study in this group found the positive relationship between ethical pressure and UPB to be partially intervened by

ethical beliefs in support of the company (Tian & Peterson, 2016). The test for moderation indicated that for high power distance the positive relationship between ethical pressure and ethical beliefs in support of the company was strengthened (Tian & Peterson, 2016). Further, controlling for gender found that females were less likely to engage in UPB (Tian & Peterson, 2016). Hence, obsessive passion combined with low mindfulness increased individuals' organizational identification in such a way that it increased willingness to engage in UPB (Kong, 2016). In addition, Machiavellianism, as well as ethical pressures, directly increased individuals' willingness to commit UPB (Castille et al., 2016; Tian & Peterson, 2016). Furthermore, moral disengagement increased individuals' willingness to engage in UPB and became stronger as interorganizational competition increased (Chen et al., 2016).

The last group of UPB studies focused on organizational commitment (Matherne & Litchfield, 2012; Schutts & Shelley, 2014). The first study was based on a cross-sectional sample of 137 restaurant workers and found a significant interaction effect between moral identity and affective commitment (Matherne & Litchfield, 2012). The interaction indicated a weakening in the positive relationship between affective commitment and UPB when moral identity was high (Matherne & Litchfield, 2012). The relationship between affective commitment and UPB was positive and significant (Matherne & Litchfield, 2012). Findings of the second study were based on a cross-sectional sample of 170 undergraduate fraternity/sorority students and indicated a significant indirect effect of organizational identification with UPB through organizational commitment, but the direct path was insignificant (Schutts & Shelley, 2014). Furthermore, the path coefficient for the direct path between organizational

commitment and UPB was significant and negative (Schutts & Shelley, 2014), which contradicts previous significant positive findings (Matherne & Litchfield, 2012).

Table 2

*Factors Evaluated in UPB Research*

<b>Factor</b>	<b>Frequency</b>
<b>Attitudinal Factors</b>	
organizational identification	10
positive reciprocity beliefs	1
affective organizational commitment	1
subordinate identification with supervisor	1
promotion focus (high/low)	1
person – organization fit	1
obsessive passion	1
power distance	1
ethical beliefs in support of the company	1
moral disengagement	2
status striving	1
<b>Situational Factors</b>	
transformational leadership	3
ethical leadership	2
transactional leadership	1
ethical culture	1
framing condition (gain/loss language)	1
colleagues' UPB	1
moral justification	1
bottom-line mentality climate	1
job autonomy	1
ethical pressure	1
interorganizational competition	1
<b>Dispositional Factors</b>	
moral identity	1
disposition towards ethical/unethical behavior	1
individual ethical ideology	1
Mindfulness	1
Machiavellianism	1
psychological entitlement	1

*Note.* Sorted by factor type and frequency in the literature.

The review of the empirical studies published on UPB indicated that researchers are answering the call to expand the model of UPB by identifying additional antecedents, mediators, and moderators at the individual, team, and organizational levels (see Table 2; Umphress & Bingham, 2011; Umphress et al., 2010). Four studies assessed the interaction of organizational identification with diverse attitudinal (i.e., positive reciprocity beliefs and moral disengagement) and dispositional factors (i.e., individual ethical ideology and disposition towards unethical behavior) and their relationship with UPB (Effelsberg et al., 2014; Lee et al., 2017; Umphress et al., 2010; Verma & Mohapatra, 2015). Another five studies examined the relationship between diverse situational factors concerning leadership (i.e., ethical leadership, transformational leadership, transactional leadership, and colleagues' UPB) and UPB (Effelsberg & Solga, 2015; Graham et al., 2015; Kalshoven et al., 2016; Miao et al., 2013; Xiaocun, 2015).

The third group of four studies mainly focused on ethical factors considering attitudinal (i.e., moral disengagement and ethical beliefs in support of the company) and dispositional factors (i.e., Machiavellianism and mindfulness; Castille et al., 2016; Chen et al., 2016; Kong, 2016; Tian & Peterson, 2016). The last group of UPB studies focused on the attitudinal factor affective organizational commitment (Matherne & Litchfield, 2012; Schutts & Shelley, 2014). Although only two studies fall into this group, the identified contradictory findings warrant further empirical investigation. The presented study sought to empirically assess the contradictory findings in the literature between organizational commitment and UPB in more detail by including organizational culture as moderator in this relationship (Di Stefano et al., 2017; Matherne & Litchfield, 2012; Pilch & Turska, 2014; Schutts & Shelley, 2014; Trevino, 1986).

## **UPB and Organizational Culture**

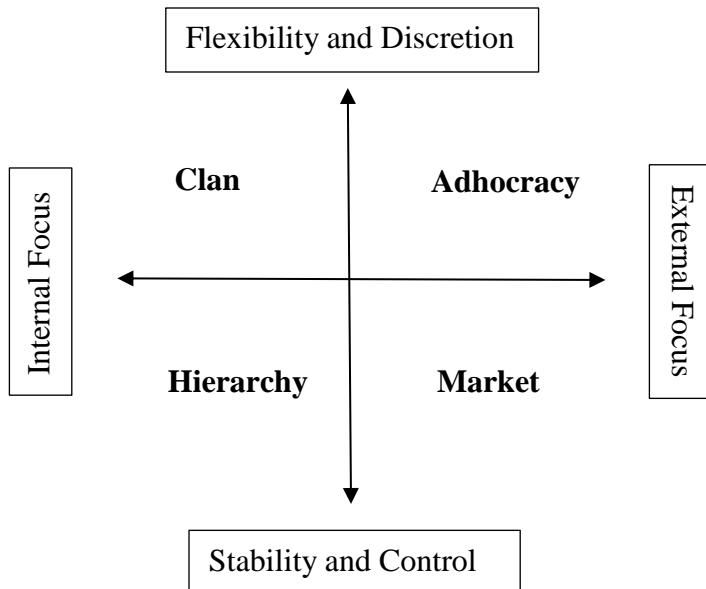
Culture as a phenomenon within an organization at the individual, group, or organizational level is based on Schein's (1985) framework of organizational culture. Organizational culture is rooted deeply within organizational life and is based on shared values, norms, beliefs, and assumptions among organizational members (Denison, 1996). While values and beliefs are closer to the surface of organizational life, assumptions are deeper representations (Denison, 1996; Schein, 1985). Cameron and Quinn (2005) emphasized the importance of organizational culture by defining it as "an underlying glue that binds the organization together" (p. 18). Schein (1985) defined organizational culture as "a pattern of shared basic assumptions that the group learned as it solved its problems of external adaptation and internal integration, that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems" (p. 19). As such, organizational culture establishes its meaning through socialization (Denison, 1996). In addition, organizational culture influences the satisfaction, morale, motivation, and commitment of organizational members (Harris & Mossholder, 1996). Furthermore, organizational culture affects the thoughts, the decision-making, and the actions of organizational members (Lok & Crawford, 2004; Schein, 1990).

Organizational culture is distinct from organizational climate. The theory of organizational climate has its origin in social psychology that focused on social climates (Denison, 1996). In general, organizational climate constitutes the employee's perceived social work environment, created by observable organizational procedures and practices as well as rewards and its relation to employee behavior, thoughts, and feelings (Denison,

1996). Hence, employee climate perceptions are “closer to the surface of organizational life” (Denison, 1996, p. 622), which excludes the deeper level of organizational life included within the concept of organizational culture.

Researchers on organizational culture have conceptualized different forms or types of cultures (Cameron & Quinn, 2005; Cooke & Rousseau, 1988; Goffee & Jones, 1998; Martin, 1992; Wallach, 1983). Wallach (1983) defined three forms of organizational cultures to include (a) supportive, (b) innovative, and (c) bureaucratic culture. Cooke and Rousseau (1988) defined organizational culture based on 12 dimensions, which are (a) humanistic-encouraging, (b) affiliative, (c) approval, (d) conventional, (e) dependent, (f) avoidance, (g) oppositional, (h) power, (i) competitive, (j) perfectionistic, (k) achievement, and (l) self-actualizing. Martin (1992) identified three types of organizational culture: (a) integration; (b) differentiation; and (c) fragmentation. Goffee and Jones (1998) defined organizational culture based on the four forms of (a) networked, (b) communal, (c) fragmented, and (d) mercenary.

A framework that conceptualizes organizational culture based on considerable research is the CVF (Cameron & Quinn, 2005). The CVF is based on extensive research on major indicators of effective organizations (Cameron & Quinn, 2005). The major indicators of effective organizations can be arranged along two dimensions (Cameron & Quinn, 2005). The first dimension creates a continuum of effectiveness criteria that range from valuing flexibility and discretion to valuing stability and control (Cameron & Quinn, 2005). The second dimension creates a continuum of effectiveness criteria that range from valuing an internal orientation to valuing an external orientation (Cameron & Quinn, 2005).



*Figure 2.* The Competing Values Framework. Adapted from Cameron & Quinn (2005).

Combined, the two dimensions create four quadrants each based on distinct indicators of effective organizations that designate the four distinct cultural types: (a) clan, (b) adhocracy, (c) market, and (d) hierarchy (Cameron & Quinn, 2005). Figure 2 depicts the CVF graphically. Cultural types that are diagonal of each other are contradictory to each other (Cameron & Quinn, 2005).

Organizations that are guided by the clan culture have a strong internal focus and base their flexibility on teamwork as well as strong organizational commitment and involvement (Cameron & Quinn, 2005). The concept of clan culture originated from the study of Japanese organizations that achieve organizational effectiveness through small-group designs (Ouchi, 1981; Pascale & Athos, 1981). Clan cultures have a strong internal focus as well as a focus on flexibility and teamwork that encourages strong

organizational commitment and involvement, such as Google or Southwest Airlines (Cameron & Quinn, 2005). Organizations with an adhocracy culture are highly flexible with an external focus that allows them to quickly adapt to changes in the competitive environment, such as Ikea (Cameron & Quinn, 2005). The focus for organizational effectiveness is on innovation and creativity (Cameron & Quinn, 2005). Market culture driven organizations value stability and control while focusing on the external environment to achieve a competitive advantage, such as General Electric or Grupo Bimbo, the world's largest bakery company (Cameron & Quinn, 2005). The theoretical foundation of the market culture is based on Williamson's (1975) transactional cost theory that bases economic success on opportunism. Organizations that have the hierarchy culture as their dominant culture, focus on stability and control with an internal focus, such as the Ford Motor Company, restaurants, and government agencies (Cameron & Quinn, 2005). Emphasis is placed on efficiency that is driven by specialization and a high process orientation (Cameron & Quinn, 2005). The hierarchy culture builds on Weber's (1946) theory of bureaucracy, which characterizes bureaucracy by a strict division of labor, a hierarchical structure, and strict adherence to rules and procedures.

Research findings show that organizations generally progress through the different forms of organizational culture in a systematic way (Cameron & Quinn, 2005). Organizations tend to start out as adhocracy cultures and progress through the organizational cultures of clan, hierarchy, and market as they continued to grow (Cameron & Quinn, 2005). As new organizations start off small and grow in size as they get older and progress through culture changes, company size and company age have frequently been reported related to organizational culture (Cameron & Quinn, 2005;

Dastmalchian, Lee, & Ng, 2000; Di Stefano et al., 2017; Heritage, Pollock, & Roberts, 2014; Lau & Ngo, 2004; Padma & Nair, 2009; Ralston, Terpstra-Tong, Terpstra, Wang, X., & Egri, 2006).

The conceptual model of UPB theorized amoral culture as a moderating factor. Organizational culture plays a significant role in ethical behavior and either motivate or control unethical behavior (Trevino, 1986; Vardi, 2001). Two studies assessed the cultural/climate factors of bottom-line-mentality climate and ethical culture as antecedents to UPB (Castille et al., 2016; Verma & Mohapatra, 2015). Ethical culture was found to be a statistically significant positive predictor of UPB ( $\beta = .494, p < .001$ ; Verma & Mohapatra, 2015). Bottom-line-mentality climate was assessed as moderator in the relationship between Machiavellianism and UPB, but no significant interaction between Machiavellianism and bottom-line mentality climate perceptions was found (Castille et al., 2016). While both studies examined one cultural factor in isolation (Castille et al., 2016; Verma & Mohapatra, 2015), a study on workplace deviant behavior, one aspect of unethical behavior, assessed the four cultural types of (a) clan, (b) adhocracy, (c) market, and (d) hierarchy culture (Di Stefano et al., 2017). Findings indicated that the four cultural types impacted workplace deviant behavior differently (Di Stefano et al., 2017). Results indicated that clan culture ( $\beta = -.096, p \leq .01$ ) and adhocracy culture ( $\beta = -.171, p \leq .001$ ) discouraged unethical behavior while market culture ( $\beta = .045, p \leq .05$ ) and hierarchy culture ( $\beta = .025, p \leq .05$ ) encouraged unethical behavior (Di Stefano et al., 2017).

The impact of the four cultural types of (a) clan, (b) adhocracy, (c) market, and (d) hierarchy has not yet tested on the specific unethical behavior UPB. However, doing

so might explain the contradictory findings of research on affective commitment and UPB. The organizational culture types based on the CVF (Cameron & Quinn, 2005) provide a good fit for the organizational types of interest based on the contradicting UPB studies (Cameron & Quinn, 2005; Matherne & Litchfield, 2012; Schutts & Shelley, 2014). Specifically, the description of the clan culture fits the sample of fraternity/sorority students, while the hierarchy culture fits the sample of restaurant workers (Cameron & Quinn, 2005; Matherne & Litchfield, 2012; Schutts & Shelley, 2014).

### **UPB and Organizational Commitment**

Organizational commitment is a multidimensional construct that can be described in terms of attitudes and behaviors (Allen & Meyer, 1990, 1996; Balfour & Wechsler, 1996; Kacmar & Carlson, 1999; Meyer & Allen, 1991; Meyer et al., 1993; Meyer, Stanley, Herscovitch, & Topolnytsky, 2002). The most highly cited conceptualization of organizational commitment is the three-component model of organizational commitment (Meyer & Allen, 1991). The three-component model of organizational commitment incorporates attitudinal as well as behavioral components and expands on the conceptualization of organizational commitment by including a psychological component (Meyer & Allen, 1991). Allen and Meyer (1996) defined organizational commitment as “a psychological link between the employee and his or her organization that makes it less likely that the employee will voluntary leave the organization” (p. 252). The psychological link refers to the attitudinal components of employees’ identification with the organization and a feeling of obligation to remain with the company (Allen & Meyer, 1996; Meyer & Allen, 1991). The attitudinal components translate into behavior via the

psychological link, which builds employees' investment into the organization and in turn increases employees' cost of leaving the organization (Meyer & Allen, 1991).

The three-component model of organizational commitment takes the three described components into consideration in the form of (a) affective commitment, (b) normative commitment, and (c) continuance commitment (Meyer & Allen, 1991; Meyer et al., 1993). Affective commitment includes employees' identification and emotional attachment with as well as involvement in the organization that makes employees want to remain with the organization (Meyer & Allen, 1991). Normative commitment refers to the employees' feeling of obligation to stay with the organization, which makes employees remain with the organization because they feel they should (Meyer & Allen, 1991). Continuance commitment reflects the employees' awareness of the cost associated with leaving the organization, which makes employees remain with the organization because they feel they must (Meyer & Allen, 1991).

Two studies assessed the relationship between organizational commitment and UPB (Matherne & Litchfield, 2012; Schutts & Shelley, 2014). Matherne and Litchfield (2012) found a significant positive relationship of affective commitment with UPB ( $r = .186$ ). Schutts and Shelley (2014), on the contrary, found organizational commitment measured with a scale that solely focuses on affective commitment (Mowday et al., 1979), had a significant negative relationship with UPB ( $r = -.235$ ). The significant positive relationship of affective commitment with UPB was found with a sample of restaurant workers while the significant negative relationship of organizational commitment with UPB was found with a sample of fraternity/sorority students (Matherne & Litchfield, 2012; Schutts & Shelley, 2014). Restaurants most commonly exhibit a

hierarchy culture while fraternity/sorority most commonly exhibit a clan culture (Cameron & Quinn, 2005). The finding of a negative relationship between organizational commitment and UPB conflicts with the theoretical model on UPB (Umphress & Bingham, 2011). Reported standardized regression weights for both studies were statistically significant, although contradictory (Matherne & Litchfield, 2012; Schutts & Shelley, 2014).

Findings of a hierarchical regression analysis by Matherne and Litchfield (2012) indicated for the direct effect of affective commitment on UPB to be positive and statistically significant ( $\beta = .197, p \leq .05$ ). The second variable that was tested in the model was moral identity, which was found to have a significant negative effect ( $\beta = -.306, p \leq .001$ ) on UPB (Matherne & Litchfield, 2012). Schutts and Shelley (2014) reported contradictory findings for a path analysis with organizational identification as partially intervening variable between person-organization fit and organizational commitment. Organizational commitment was a fully intervening variable between person-organization fit and UPB (Schutts & Shelley, 2014). The path coefficient for the direct path from organizational commitment to UPB was found to be statistically significant and negative ( $\beta = -.323, p \leq .001$ ; Schutts & Shelley, 2014). The path coefficients from person-organization fit ( $\beta = .449, p \leq .001$ ) and organizational identification ( $\beta = .367, p \leq .001$ ) to organizational commitment were both statistically significant and positive.

Meta-analysis findings over a sample of 68 studies indicated a significant positive correlation between organizational commitment and organizational citizenship behavior (OCB), which is a discretionary employee behavior (Organ & Ryan, 1995). Both OCB

and UPB consist of pro-organizational behaviors that are exhibited at employees' discretion, are not directly recognized by the organization's formal reward system, and are conducted with the intention to positively affect organizational performance (Brief & Motowidlo, 1986; Organ, 1990; Umphress et al., 2010). However, contrary to OCB, UPB looks at unethical discretionary employee behavior (Umphress et al., 2010).

Two successive meta-analyses confirmed the findings of Organ and Ryan (1995). Significant positive relationships between OCB and organizational commitment as well as affective commitment were identified and an insignificant positive relationship between OCB and continuance commitment was reported (Podsakoff, MacKenzie, & Bommer, 1996; Podsakoff, MacKenzie, Paine, & Bachrach, 2000). Therefore, conducting further studies that test the relationship between organizational commitment and UPB is important in refining the theoretical model of UPB.

### **Measurement and Structural Invariance of Organizational Commitment**

In this study structural invariance was assessed between two types of organizational culture. While no literature exists on structural or measurement invariance for UPB, there is empirical evidence of structural and measurement invariance for affective organizational commitment. Several studies have assessed cross-national measurement invariance of the affective commitment subscale of the three-component model of organizational commitment by Meyer et al. (1993). Evidence for metric invariance was found across 49 countries based on a sample recruited by a commercial survey company (Gelade, Dobson, & Gilbert, 2006). However, another study did not find support for metric invariance across 25 countries based on a sample from a large multinational manufacturing company and an international social survey program

(Hattrup, Mueller, & Aguirre, 2008). Measurement noninvariance of affective commitment was found between full-time employees of the four countries (a) Portugal, (b) Japan, (c) the United States, and (d) Sweden (Tavares & Caetano, 2003). Another study found measurement invariance of affective commitment across six Northern and Western European countries within a sample of employees at 18 universities (Eisinga, Teelken, & Doorewaard, 2010). A study that recruited U.S. and Japanese full-time retail workers via Qualtrics® also found measurement invariance of the affective commitment scale (Astakhova, 2016).

Additional studies have assessed diverse forms of measurement and structural invariance of the affective commitment subscale. The affective commitment subscale has been shown to possess measurement invariance across gender and languages based on two studies using samples of French and English Canadians (Morin et al., 2009; Morin et al., 2011). Furthermore, the affective commitment subscale has been shown to possess measurement invariance across supervisors of three organizations, including (a) an insurance company, (b) a pharmaceutical company, and (c) a communications company (Morin et al., 2011). Moreover, the affective commitment subscale has been shown to have measurement and structural invariance with intentions to resign across younger and older adults based on a sample of employees at an Australian media company (Von Hippel, Kalokerinos, & Henry, 2013). The structural model assessed affective commitment and job satisfaction as mediators between stereotype threat and intentions to resign. Structural invariance was assessed by constraining the structural paths between the constructs (Von Hippel et al., 2013). The same study was replicated with full-time workers in the United States recruited through an online data collection company and

indicated measurement invariance with affective commitment and intentions to resign across younger and older adults while lacking structural invariance (Von Hippel et al., 2013). Testing for partial structural invariance was not conducted (Von Hippel et al., 2013). Lastly, measurement invariance for the affective commitment scale has been demonstrated across a sample of short-term and long-term managers based on a sample recruited from two not-for-profit training and certification organizations in Canada (Gottlieb, Maitland, & Shera, 2012).

The literature on measurement and structural invariance for the affective commitment scale indicated measurement invariance of the scale across several countries (Astakhova, 2016; Eisinga et al., 2010; Gelade et al., 2006; Hattrup et al., 2008; Tavares & Caetano, 2003). Measurement invariance has also been shown to exist across gender, languages, age groups, different types of organizations, as well as short-term and long-term managers (Gottlieb et al., 2012; Morin et al., 2009; Morin et al., 2011; Von Hippel et al., 2013). However, measurement and structural invariance for the affective commitment scale across different types of organizational cultures has not yet been tested.

### **Research Hypotheses**

The literature review on UPB indicated contradictory findings. Matherne and Litchfield (2012) found a significant positive relationship of affective commitment with UPB ( $r = .186$ ). In contrast, Schutts and Shelley (2014) found organizational commitment, measured with a scale that solely focuses on affective commitment (Mowday et al., 1979), to have a significant negative relationship with UPB ( $r = -.235$ ). However, these two studies did not take organizational culture into consideration, which

is a moderating factor between the exogenous variables positive social exchange and organizational identification and the endogenous variable neutralization in the conceptual model of UPB (Umphress & Bingham, 2011). The significant role of culture on ethical behavior is based on Trevino's (1986) interactionist model. Empirical evidence indicates that the cultural types, clan, adhocracy, market, and hierarchy culture can either encourage or discourage unethical behavior (Di Stefano et al., 2017; Pilch & Turska, 2014). Clan and adhocracy cultures have shown to discourage unethical behavior while market and hierarchy cultures encourage unethical behavior (Di Stefano et al., 2017; Pilch & Turska, 2014). Unethical behavior might be discouraged due to the focus on cooperation and teamwork in clan cultures as well as the focus on responsibility in adhocracy cultures (Di Stefano et al., 2017; Pilch & Turska, 2014). Unethical behavior might be encouraged due to the focus on competitiveness in market cultures and due to the bureaucratic structures in hierarchy cultures (Di Stefano et al., 2017; Pilch & Turska, 2014). In addition, the placement of the culture along the flexibility versus stability continuum may be a factor in encouraging or discouraging unethical behavior (Di Stefano et al., 2017; Pilch & Turska, 2014). While the two culture types clan and adhocracy that focus on flexibility discourage unethical behavior, the two culture types hierarchy and market that focus on stability encourage unethical behavior (Di Stefano et al., 2017; Pilch & Turska 2014).

The two UPB studies that assessed affective organizational commitment and its relationships with UPB used different samples from different organizations (Matherne & Litchfield, 2012; Schutts & Shelley, 2014). Organizational culture might explain the contradicting results. The significant positive relationship of affective organizational

commitment with UPB was found with a sample of restaurant workers, a type of organization that most commonly exhibit a hierarchy culture (Cameron & Quinn, 2005; Matherne & Litchfield, 2012). In contrast, the significant negative relationship of affective organizational commitment with UPB was found with a sample of fraternity/sorority students who most commonly exhibit a clan culture (Cameron & Quinn, 2005; Schutts & Shelley, 2014).

Multi-group analysis of structural invariance (MASI) allows to assess whether causal relationships work in the same way across groups (Deng et al., 2005; Kline, 2016; Schumacker & Lomax, 2016; Teo et al., 2009). The literature has shown two techniques of testing structural invariance (Byrne, 2010; Kline, 2016; Schumacker & Lomax, 2016). One method tests structural invariance by assessing invariance in latent means, variances, and covariances across groups (Byrne, 2010); the other method tests structural invariance by assessing invariance in regression weights across groups (Kline, 2016; Schumacker & Lomax, 2016). The study tested for structural invariance by assessing whether differences in the regression weights between components of affective organizational commitment and UPB differ between the two cultural types clan and hierarchy (Deng et al., 2005; Kline, 2016; Schumacker & Lomax, 2016; Teo et al., 2009). The assessment of structural invariance based on regression weights across groups was chosen due to findings of contradictory regression weights in the UPB literature (Matherne & Litchfield, 2012; Schutts & Shelley, 2014). Findings by Matherne and Litchfield (2012) reported a statistically significant positive regression weight ( $\beta = .197, p \leq .05$ ) when UPB was regressed on affective organizational commitment. In contrast, Schutts and Shelley (2014) reported a statistically significant negative regression weight ( $\beta = -.323, p$

$\leq .001$ ) when UPB was regressed on affective organizational commitment. Utilizing MASI allows comparing the regression weights between affective organizational commitment and UPB for statistical and practical significant differences across the cultural groups of clan and hierarchy. The findings helped to determine whether the contradictory findings of previous research can be explained based on organizational culture.

Testing for MASI first requires the establishment of measurement invariance (Kline, 2016; Meredith, 1993; Schumacker & Lomax, 2016; Teo et al., 2009; Van de Schoot et al., 2012) to ensure that the survey measures “identical constructs with the same structure across different groups” (Van de Schoot et al., 2012, p. 486). Measurement invariance involves the hierarchically ordering of two nested models: configural invariance and metric invariance (Deng et al., 2005; Vandenberg & Lance, 2000). Two additional steps (i.e., scalar and strict invariance) are commonly seen in the literature (Rensvold & Cheung, 2001; Schumacker & Lomax, 2016; Teo et al., 2009; Vandenberg & Lance, 2000; Van de Schoot et al., 2012). However, these two additional steps were not conducted in this study, because only metric level invariance is a necessary condition for comparing path coefficients across groups (Cheung & Lau, 2011; Vandenberg & Lance, 2000). Once measurement invariance is established, structural invariance can be tested by assessing whether differences in the structural paths between the cultural types are statistically and practically significant (Byrne, 2010; Cheung & Lau, 2011; Deng et al., 2005; Kline, 2016; Schumacker & Lomax, 2016; Teo et al., 2009; Vandenberg & Lance, 2000). Multi-group structural invariance is given when the comparison between an unconstrained and a constrained structural model yields a non-

significant  $\chi^2$  difference (Byrne, 2010; Cheung & Lau, 2011; Deng et al., 2005; Kline, 2016; Schumacker & Lomax, 2016; Teo et al., 2009; Vandenberg & Lance, 2000).

Based on the following literature findings, structural noninvariance was expected to be found for affective organizational commitment and UPB based on the two organizational cultures clan and hierarchy. First, contradictory research findings on UPB indicate a negative relationship for a clan culture sample while indicating a positive relationship for a hierarchy culture sample (Matherne & Litchfield, 2012; Schutts & Shelley, 2014). Second, the support in the literature was such that clan culture discourages unethical behavior while hierarchy culture encourages unethical behavior (Di Stefano et al., 2017; Pilch & Turska, 2014). To address whether organizational culture can influence the relationship between affective organizational commitment and UPB based on the MASI method, which required the determination of measurement invariance as a prerequisite, the following hypotheses were tested:

*Hypothesis 1: The assessed constructs will have the same meaning across the cultural groups of clan and hierarchy as indicated by metric measurement invariance.*

*Hypothesis 2: There will be a difference in the structural relationship between affective organizational commitment and UPB by organizational culture due to a positive path coefficient for the hierarchy culture and a negative path coefficient for the clan culture.*

## Chapter 3 - Methodology

### **Introduction**

This chapter describes the design and method of the study, and includes the following sections: the purpose of the study, the research hypotheses, an overview of the pilot study, the design of the main study, a description of the population and the sample along with sample representativeness, the instrumentation for the survey, the survey design, the data collection procedures, and the data analysis procedures (data cleaning, group equivalency, statistical assumptions, construct validity, culture type comparison, and common method variance). The chapter concludes with a summary.

### **Purpose of the Study**

The purpose of the present study was to empirically assess the structural invariance of affective organizational commitment on UPB across the two organizational cultural types: clan and hierarchy. The population of interest includes nonmanagement full-time U.S. employees between the ages of 18 and 54 working at organizations in the service sector with either clan or hierarchy culture as their dominant culture. Testing for structural invariance first required the establishment of measurement invariance (Kline, 2016; Meredith, 1993; Schumacker & Lomax, 2016; Teo et al., 2009; Vandenberg & Lance, 2000; Van de Schoot et al., 2012). Measurement invariance by organizational culture (i.e., clan and hierarchy) was assessed in a two-step process

including configural and metric invariance. Once measurement invariance was confirmed, structural invariance was tested by assessing whether differences in the structural paths between the cultural types are statistically and practically significantly different. Structural noninvariance was expected to be found for affective organizational commitment and UPB based on the two organizational cultures, clan and hierarchy. A positive path coefficient was hypothesized between affective commitment and UPB for the hierarchy culture and a negative path coefficient was hypothesized for the clan culture. Once the expected lack of structural invariance was confirmed, testing for partial structural invariance was conducted.

### **Research Hypotheses**

Contradictory research findings in the literature on UPB indicated a negative relationship for a clan culture sample while indicating a positive relationship for a hierarchy culture sample (Matherne & Litchfield, 2012; Schutts & Shelley, 2014). In addition, literature findings support that clan culture discourages unethical behavior while hierarchy culture encourages unethical behavior (Di Stefano et al., 2017; Pilch & Turska, 2014). Informed by these literature findings, structural noninvariance was expected to be found for affective organizational commitment and UPB across the two organizational cultures of clan and hierarchy. To assess whether organizational culture can influence the relationship between affective organizational commitment and UPB based on the MASI method, which required the determination of measurement invariance as a prerequisite, the following hypotheses were tested:

*Hypothesis 1: The assessed constructs will have the same meaning across the cultural groups of clan and hierarchy as indicated by metric measurement invariance.*

*Hypothesis 2: There will be a difference in the structural relationship between affective organizational commitment and UPB by organizational culture due to a positive path coefficient for the hierarchy culture and a negative path coefficient for the clan culture.*

### **Pilot Study**

The purpose of the pilot study (see Appendix A) was to determine group similarities and differences between full-time U.S. employees working at organizations with either clan or hierarchy culture, as this is a required component when testing for structural invariance (Vandenberg & Lance, 2000). For the pilot study, organizational culture and demographic data were gathered from an Amazon Mechanical Turk (MTurk®) sample. Demographic information that were collected, consisted of gender, age, race/ethnicity, educational level, industry, company size, company age, tenure with the company, and manager/non-manager, as they have been frequently reported related to research on organizational culture or UPB (Cameron & Quinn, 2005; Dastmalchian et al., 2000; Di Stefano et al., 2017; Heritage et al., 2014; Lau & Ngo, 2004; Padma & Nair, 2009; Ralston et al., 2006). A series of Pearson's chi-square tests were conducted on the demographic variables of gender, age, race/ethnicity, educational level, industry, company size, company age, tenure with the company, and manager/non-manager with organizational culture (i.e., clan culture and the hierarchy culture) as a grouping variable. Based on preliminary findings, the population of interest was refined to nonmanagement

full-time U.S. employees between the ages of 18 and 54 working at organizations in the service sector with either clan or hierarchy culture. A second set of Pearson's chi-square tests were run based on the refined demographics. The results of the second set of Pearson's chi-square tests indicated that access to an employee group working at organizations with clan culture and a comparable employee group working at organizations with hierarchy culture was possible using MTurk®. The results of the Pearson's chi-square tests based on the demographic variables of gender, age, race/ethnicity, educational level, company size, company age, and tenure with organizational culture (i.e., clan culture and the hierarchy culture) as the grouping variable are provided in Table 3.

Table 3

*Group Comparison Chi-Square Results*

Characteristic	$\chi^2$	df	p-value	Cramer's V
Gender	.40	1	.53	.06
Age	.38	1	.54	.05
Race/Ethnicity	11.63	4	.02	.30
Highest Level of Education	3.49	5	.62	.17
Company Size	.46	1	.50	.06
Company Age	4.13	3	.25	.18
Tenure	3.6	4	.46	.17

*Note.* Results are for the Pooled Sample ( $n = 127$ ) of Clan Culture and Hierarchy Culture for Nonmanagement, Age 18-54, and Service Industry.

Statistical significance was determined at  $p \leq .05$  and practical significance was determined at a Cramer's  $V \geq .10$  (Huck, 2012). The groups based on race/ethnicity were found to be statistically and practically significantly different. The  $p$ -value was  $\leq .05$  and the Cramer's  $V$  value was .30. Another set of Pearson's chi-square tests were conducted

to assess whether grouping race/ethnicity by Caucasian or White and not Caucasian or White would resolve the findings of statistically and practically significantly difference. The Pearson's chi-square remained statistically and practically significant ( $\chi^2 = 11.20, p = 0.01, V = .30$ ). A review of the literature did not indicate that race and organizational culture strongly correlated. In addition, it needed to be noted that the group differences were due to a small sample. The sample size was reduced due to focusing on a more specific population based on the initial group difference results found in the original pilot data. If the issue had arisen in the main study, propensity score matching was to be conducted to equate these differences along with other cultural group differences based on the assessed demographics (Rubin, 1997).

Another important finding of the pilot study was the statistical and practical insignificant results for group differences by company size (i.e., 1-499 employees and 500+ employees). Based on the literature on organizational culture, "organizations tend to progress through a predictable pattern of organization culture changes" (Cameron & Quinn, 2005, p. 53). Organizations tend to start as adhocracy cultures and progress through the organizational cultures of clan, hierarchy, and market as they continued to grow (Cameron & Quinn, 2005). Based on the ability to achieve an equal distribution of company sizes between the two culture groups for the pilot study, company size was not used as a control variable in the main study but was equated for.

### **Design of the Main Study**

A quantitative three-wave research design was used for this study. The data were collected based on a survey research method. The online survey platform Qualtrics® was utilized to collect anonymous data at three points in time. The targeted population for this

survey was nonmanagement full-time U.S. employees between the ages of 18 and 54 working at organizations in the service sector with either clan or hierarchy culture as their dominant culture. Study participants were recruited with the assistance of MTurk® and asked to complete the anonymous surveys with the freedom to quit at any time. Respondents' data across the three waves were matched via the MTurk® WorkerID. MTurk® was chosen because it has been found to provide very diverse samples concerning occupations, organizations, and industries and to be a method of data collection that is as valid and reliable as traditional methods such as American college samples and convenience samples (Behrend et al., 2011; Berinsky et al., 2012; Buhrmester et al., 2011; Feitosa et al., 2015; Landers & Behrend, 2015). In addition, MTurk® allows the pre-qualification of workers based on the desired sample characteristics (Chambers & Nimon, 2018). Furthermore, the results of the pilot study indicated that access to an employee group working at organizations with clan culture and a comparable employee group working at organizations with hierarchy culture was possible using MTurk®.

The three-wave survey consisted of five previously validated scales. Unethical pro-organizational behavior was measured using the UPB scale by Umphress et al. (2010). The OCAI by Cameron and Quinn (1999) was used to measure organizational culture, which consists of the four culture subscales: (a) clan culture; (b) adhocracy culture; (c) market culture; (d) and hierarchy culture. The affective commitment subscale of the three-component model of organizational commitment by Meyer and Allen (1997) was used to measure affective organizational commitment. A short version of Paulhus' (1991) impression management subscale of the balanced inventory of desirable

responding was used to control for social desirability response bias. Additional questions included screening questions, bot checks, IMCs, and demographics. The purpose of bot checks is to assess whether respondents are actual people and understand English (Chambers & Nimon, 2018). Instructional manipulation checks ensure that survey respondents are reading the instructions (Oppenheimer, Meyvis, & Davidenko, 2009). Instructional manipulation checks are similar to the survey questions; however, respondents are asked to demonstrate that they have read the instructions without using the standard response format (Oppenheimer et al., 2009).

The data were collected at three points in time, cleaned, and assessed for statistical assumptions. Demographics and work characteristic information were collected in Survey 1 to identify respondents that met the sample requirements. Survey 2 was only sent to qualified workers based on their responses to Survey 1 and included the items for the independent variable affective commitment, the moderator organizational culture, the dependent variable UPB, and a measure for social desirability to control for social desirability response bias (Castille et al., 2016; Podsakoff et al., 2003; Podsakoff et al., 2012). In Survey 3, the UPB scale for the dependent variable was collected again to avoid the common method bias regarding measurement context due to collecting the independent variable and the dependent variable at the same point in time (Podsakoff et al., 2003). The data analysis included construct validity, confirmatory factor analysis to assess measurement invariance, and structural modeling to assess structural invariance. The demographic data were used to assess sample representativeness of the population and to ensure group equivalency.

## **Population and Sample**

The population for this survey was nonmanagement full-time U.S. employees between the ages of 18 and 54 working at organizations in the service sector with either clan or hierarchy culture as their dominant culture. Although highly desired, most sampling processes do not allow for all individuals of the target population to have an opportunity to be included in the sample (Fowler, 2014). A sample frame constitutes the individuals of the target population who have an opportunity to be included in the sample (Fowler, 2014). For the study, MTurk® workers were the sample frame. For the opportunity to be included in the study, individuals of the desired population had to have an MTurk® worker account and access to the internet. From this sample frame, the sample for the study consisted of 500 nonmanagement full-time U.S. employees between the ages of 18 and 54 working at organizations in the service sector with either clan or hierarchy culture as their dominant culture.

Participants located in the United States and from diverse industries within the service sector were of interest. The diversity in industries ensured diversity in organizational cultures (Cameron & Quinn, 2005). The service sector was chosen based on information from Bureau of Labor Statistics (BLS, 2017a) that indicated that it constitutes the largest industry sector in the United States with 86.7% of employees working in this sector. In addition, the service sector represents the restaurant workers of one of the UPB study samples that indicated conflicting results (Matherne & Litchfield, 2012). The other UPB study that indicated conflicting results sampled fraternity/sorority students who most likely will work in the service sector upon completion of their degrees (Schutts & Shelley, 2014).

Limiting the geographic environment to the United States ensured that the answers for the UPB scale were answered based on the same societal principles and norms (Umphress & Bingham, 2011). In addition, employees had to be in the 18-54 age group, which combined and encompassed the generational cohorts of Generation X and Millennials (Fry, 2015). These two generational cohorts are currently the largest in the labor force (Fry, 2015). Furthermore, full-time employees were of interest because they constitute 88.7% of the employed population in the United States (BLS, 2017b). Moreover, focusing on nonmanagers was of interest as the two studies on UPB on which this study was based, assessed primarily nonmanagers with the sample of restaurant workers consisting of 86.6% nonmanagers and the sample of fraternity/sorority students consisting of 100% nonmanagers (Matherne & Litchfield, 2012; Schutts & Shelley, 2014).

### **Sample**

Study participants were recruited with the assistance of MTurk®. MTurk® is an online survey distribution platform that connects researchers with respondents and has been used for several cross-sectional studies on UPB (Castille et al., 2016; Chen et al., 2016; Graham et al., 2015). MTurk® also has been used successfully for longitudinal studies with response rates ranging from 60% to 75% (Berinsky et al., 2012; Buhrmester et al., 2011; Stoycheff, 2016). MTurk® not only allows the surveying of large samples within a short period of time but also often results in diverse samples due to surveying respondents from a very diverse set of occupations, organizations, and industries (Buhrmester et al., 2011). In addition, MTurk® has been found to be a method of data collection that is as valid and reliable as traditional methods such as American college

samples and convenience samples while producing more diverse samples (Behrend et al., 2011; Berinsky et al., 2012; Buhrmester et al., 2011; Feitosa et al., 2015; Landers & Behrend, 2015). The increased sample diversity of MTurk® compared to American college samples, is based on a higher percentage of employed individuals, more diverse educational backgrounds, and a wider range of professions, which make study findings more generalizable for organizational research (Behrend et al., 2011; Buhrmester et al., 2011). However, MTurk® samples have shown to be slightly younger, more educated, and have a slightly lower income than the general U.S. population (Paolacci, Chandler, & Ipeirotis, 2010). Nevertheless, MTurk® is the appropriate fit for studies that include a diverse population of workers from various industries and geographic regions within the United States (Woo, Keith, & Thornton, 2015). Based on the literature on MTurk® and its worker population, MTurk® workers provided a good sample frame for the study. The study focused on the generational cohorts of Generation X and Millennials, which are the dominant generational cohorts among MTurk® workers (Paolacci et al., 2010). Furthermore, the results of the pilot study indicated that access to an employee group working at organizations with clan culture and a comparable employee group working at organizations with hierarchy culture was possible using MTurk®.

Compensation for individuals who complete Human Intelligence Tasks (HITs) within MTurk® are generally minimal ranging from 10 cents to 50 cents for short surveys (Goodman, Cryder, & Cheema, 2013). Compensation has been shown to influence the data collection speed while having no significant influence on data quality (Buhrmester et al., 2011). In addition, requestors can design HITs that prevent repeated participation (Chandler, Mueller, & Paolacci, 2014). Repeated participation is further prevented as

each worker is only allowed one account and is assigned a unique alphanumeric worker identification code (Behrend et al., 2011). The worker identification code is also used to monitor worker performance based on payment of satisfactory work and payment refusal for subpar work (Buhrmester et al., 2011; Mason & Suri, 2012). Workers with too high rejection rates get blocked for completing HITs in the future (Mason & Suri, 2012).

MTurk® allows setting worker requirements that potential survey respondents have to meet to qualify before being offered the HIT (Chambers & Nimon, 2018). The location requirement was set to United States and the employment status was set to full-time to ensure the respondents are living and working in the United States. In addition, MTurk® requires workers to be at least 18 years to be able to sign up, which was the minimum age requirement set for this study.

In accordance with the guidelines provided by Henson and Roberts (2006) who recommend a minimum ratio of 10:1, a minimum sample size of 220 was desired for the purpose of this study. For the MASl, the two cultural types were considered as separate samples (Deng et al., 2005). Therefore, a minimum of 220 useful responses was required for each cultural group with a combined minimum of 440. Wolf, Harrington, Clark, and Miller (2013) provided another method for estimating the minimum sample size based on factor loadings for CFAs. The required minimum sample size is based on the number of factors and the number of indicators per factor (Wolf et al., 2013). While the required minimum sample size increases with the number of factors, it decreases with an increase in indicators (Wolf et al., 2013). The affective commitment scale (Meyer & Allen, 1997) has one first-order factor with six indicators; the UPB scale (Umphress et al., 2010) has one first-order factor with six

indicators; and the social desirability scale (Paulhus, 1991) has one first-order factor with 10 indicators.

Based on the reviewed literature, CFA factor loadings of the scales for affective commitment and UPB have consistently been above the .65 loading threshold while not always meeting the .85 loading threshold. The CFA factor loadings of the social desirability scale did not always meet the .65 loading threshold while consistently meeting the .50 loading threshold. Therefore, the required minimum sample was based on the .65 CFA factor loading threshold for affective commitment and UPB (see: Table 2: CFA Loadings of .65 of Wolf et al., 2013) and based on the .50 CFA factor loading threshold for social desirability (see: Table 1: CFA Loadings of .50 of Wolf et al., 2013). For the affective commitment and UPB scales, 60 respondents were required each and a total of 90 respondents were required for the social desirability scale based on eight indicators, since information for ten indicators was not provided. Since the two cultural groups are considered separate samples, 210 respondents were required per group for a combined total of 420. The estimation techniques for the required minimum sample size indicated slightly different estimates (i.e., 220 versus 210 per group). The recommended minimum sample size for confirmatory analyses based on Harris and Schaubroeck (1990) was 200 (400 total for the two groups). Based on this information and best practices for structural equation model (SEM) analyses (Kline, 2016), a total sample size target for the study was set at 500 with 250 for each of the two groups for Survey 3. This ensured an adequate sample size even in the case that propensity score matching needed to be conducted to equate the groups by their covariates (Rubin, 1997).

The minimum sample size for Survey 2 was calculated based on a response rate estimate of 60 to 75% for longitudinal surveys in MTurk® (Berinsky et al., 2012; Buhrmester et al., 2011; Stoycheff, 2016). Starting with a minimum sample size of 250 for Survey 3 and dividing it by .6 (i.e., 60% response rate) resulted in a minimum of 417 responses per group for Survey 2. Findings of the pilot study indicated that half of the respondents identified having a clan or hierarchy culture while the other half identified having an adhocracy or market culture. Based on this information, the total minimum sample size for Survey 2 was estimated at 1,668 (i.e., 417 x 4 for four culture groups). Again, the minimum sample size for Survey 2 was increased to 2,000 to ensure an adequate sample size in the case that the propensity score matching needed to be conducted. For the estimation of the minimum sample size for Survey 1, 2,000 was divided by .6 (i.e., 60% response rate), resulting in 3,333 required responses. However, certain demographics such as age 18-54 years, nonmanagement, and service industry were screened for in Survey 1. Findings of the pilot study indicated that 2.5% of the respondents identified outside of the desired age range of 18-54 years, 22.5% of the respondents identified as managers, and 4% of the respondents identified as non-service industry. Based on this information, the total minimum sample size for Survey 1 was estimated at 4,300.

### **Sample Representativeness**

To allow for generalizability of findings beyond the sample, the external validity of the sample was assessed by comparing the sample's demographics with the population's demographics (Kline, 2009). The collected demographical data of the pooled sample (i.e., samples of clan and hierarchy culture combined) were used to assess

the sample's representativeness of the population based on gender, age, race/ethnicity, educational level, and company size. The sample demographics were compared to equivalent United States Census Bureau (USCB) and BLS demographic information of full-time U.S. employees (see Table 4). The USCB (2017) provided information on the gender distribution and education attainment of service sector employees in the United States. According to the USCB (2017), 46.9% of service sector employees are male while 53.1% are female. However, the reported data did not distinguish between full-time and part-time employees (USCB, 2017). The reported education attainment showed 5.9% had less than high school, 22.7% were high school graduates, 16.5% had some college, 11.4% had a 2-year degree, 26.3% had a 4-year degree, 14.6% had a master's or professional degree, and 2.7% had a doctorate degree (USCB, 2017).

The BLS provided information on age and race distribution of full-time U.S. workers (BLS, 2017b). However, the reported data did not distinguish between service sector and non-service sector (BLS, 2017b). The reported age distribution for full-time workers showed that 10.8% of workers are 18-24 years and 89.2% are 25-54 years (BLS, 2017b). The race distribution of full-time U.S. workers consisted of 68.5% Caucasians or Whites, 15.0% Hispanics, 10.8% African Americans or Blacks, and 5.7% Asian or Pacific Islanders (BLS, 2017b). No data on American Indians or other Native Americans were reported (BLS, 2017b).

The BLS (2017c) also provided information on employment by company size. The reported data did not distinguish between full-time or part-time employment and did not distinguish based on industry sector (BLS, 2017c). The reported data on company size grouping indicated that 47.82% of U.S. workers were employed at firms with 1-499

employees while 52.18% of U.S. workers were employed at firms with 500 or more employees (BLS, 2017c).

Table 4

*Population Demographics*

Characteristic	n	%
Gender		
Male	49,854	46.9
Female	56,342	53.1
Age		
18-24	9,447	10.8
25-54	77,866	89.2
Race/Ethnicity		
African American or Black	11,146	11.2
American Indian/Other Native American	n/a	n/a
Asian or Pacific Islander	5,900	5.9
Caucasian or White (other than Hispanic)	66,212	66.5
Hispanic	16,270	16.4
Other	n/a	n/a
Highest Level of Education		
Less than high school	6,301	5.9
High school graduate	24,110	22.7
Some college	17,530	16.5
2-year degree	12,062	11.4
4-year degree	27,903	26.3
Master's or Professional degree	15,464	14.6
Doctorate	2,827	2.6
Company Size		
1-499 employees	57,895	47.8
500 or more employees	63,175	52.2

*Note.* Population Demographics are provided in thousands. n (gender, education) = 106,196. n (age) = 87,313. n (race) = 99,528. n (company size) = 121,070.

Sample representativeness was assessed based on Pearson's chi-square tests by comparing the demographic percentages of the collected pooled sample to the population percentages obtained from the BLS and the USCB. Statistical significance was

determined at  $p \leq .05$  and practical significance was determined at  $w \geq .10$  (Cohen, 1988; Huck, 2012).

### **Measurement Instruments**

Three measures were used to test the study's theoretical model. Unethical pro-organizational behavior was measured using the UPB scale by Umphress et al. (2010). The OCAI by Cameron and Quinn (1999) was used to measure organizational culture, which consists of the four culture subscales: (a) clan culture; (b) adhocracy culture; (c) market culture; and (d) hierarchy culture. The three-component model of organizational commitment by Meyer and Allen (1997) was used to measure affective organizational commitment. Furthermore, a short version of Paulhus' (1991) impression management subscale of the balanced inventory of desirable responding was used to control for social desirability response bias.

### **Unethical Pro-Organizational Behavior**

The UPB scale (Umphress et al., 2010) was used to measure UPB. The UPB scale consists of 6 items anchored on a 7-point Likert-type scale, with 1 indicating *strongly disagree* and 7 indicating *strongly agree*. The UPB scale asks respondents to indicate how much they agree with statements such as "If it would help my organization, I would misrepresent the truth to make my organization look good." The first-order factor structure of the UPB scale was documented by Umphress et al. (2010) with factor loadings ranging from .66 to .88 along with adequate reliability with a reported coefficient alpha value of 0.90. Discriminant validity has been shown to exist with in-role behaviors and organizational citizenship behaviors based on model fit indices (Umphress et al., 2010). The best fitting model had UPB, in-role behaviors, and

organizational citizenship behaviors loading on separate factors, which also provided evidence of convergent validity of the UPB scale (Umphress et al., 2010).

## **Organizational Culture**

A literature search for organizational culture scales identified seven potential organizational culture scales (see Table 5). The organizational culture index (Wallach, 1983) organized organizational culture based on the three dimensions: (a) supportive; (b) innovative; and (c) bureaucratic culture. The defined culture groups did not provide a good fit for the organizational types of interest based on the contradicting UPB studies (Matherne & Litchfield, 2012; Schutts & Shelley, 2014; Wallach, 1983). While the description of the bureaucratic culture fit the sample of restaurant workers, none of the other cultures provided a clear fit for the sample of fraternity/sorority students (Matherne & Litchfield, 2012; Schutts & Shelley, 2014; Wallach, 1983). Hofstede (1984) classified four cultural dimensions based on (a) individualism versus collectivism, (b) high versus low power distance, (c) high versus low uncertainty avoidance, and (d) masculinity versus femininity. The cultural dimensions based on Hofstede (1984) did not seem an appropriate fit for the study because the cultural classifications are based on societal cultures (Hofstede, 1984) rather than organizational cultures as needed for the purpose of the study. The organizational culture inventory (Cooke & Rousseau, 1988) indicated good reliability (see Table 5). However, with 120 items the measure was too long for the purpose of this study. O'Reilly, Chatman, and Caldwell's (1991) organizational culture profile assesses person-organization fit, which did not provide for a good fit for the purpose of the study.

Table 5

*Summary of Organizational Culture Instruments*

Authors & Year	Instrument Name	Number of Items	Answer Choices	Reliabilities and Key Statistics
Cameron & Quinn (2005)	Organizational Culture Assessment Instrument	24 items - 4 dimensions	5-point Likert-type scale	$\alpha=NR$ ; $M=NR$ ; $SD=NR$
Deshpande, Farley, & Webster (1993)	Culture Scale	16 items - 4 dimensions	Ipsative scale	Market: $\alpha=.82$ ; $M=106.1$ ; $SD=37.4$ Adhocracy: $\alpha=.66$ ; $M=78.9$ ; $SD=26.4$ Clan: $\alpha=.42$ ; $M=117.0$ ; $SD=28.8$ Hierarchy: $\alpha=.71$ ; $M=100.9$ ; $SD=31.4$
Goffee & Jones (1998)	Cultural Typology	23 items - 2 dimensions	5-point Likert-type scale	Sociability: $\alpha=.83$ ; $M=NR$ ; $SD=NR$ Solidarity: $\alpha=.89$ ; $M=NR$ ; $SD=NR$
O'Reilly, Chatman, & Caldwell (1991)	Organizational Culture Profile	54 items	Ranking of items	$\alpha=.88$ ; $M=.23$ ; $SD=.19$
Cooke & Rousseau (1988)	Organizational Culture Inventory	120 items - 12 dimensions	5-point Likert-type scale	$\alpha=.77-.92$ ; $M=2.21-3.62$ ; $SD=.51-.80$
Hofstede (1984)	Cultural Dimensions	4 dimensions	Index scores	NR
Wallach (1983)	Organizational Culture Index	3 dimensions - 24	4-point Likert-type scale	$\alpha=NR$ ; $M= NR$ ; $SD= NR$

*Note.* All reliabilities and key statistics are those reported by the original authors.

Goffee and Jones (1998) categorized the four organizational culture types of (a) networked, (b) communal, (c) fragmented, and (d) mercenary along two dimensions based on their level of sociability and solidarity. While the scale has a reasonable number of items and good reliability (see Table 5), the defined culture groups did not provide a good fit for the organizational types of interest based on the contradicting UPB studies (Goffee & Jones, 1998; Matherne & Litchfield, 2012; Schutts & Shelley, 2014). While the description of the communal culture fit the sample of fraternity/sorority students, none of the other cultures provided a clear fit for the sample of restaurant workers (Goffee & Jones, 1998; Matherne & Litchfield, 2012; Schutts & Shelley, 2014).

The two organizational culture scales that are based on the CVF (Cameron & Quinn, 2005) were the most relevant to the study. The CVF focuses on four well-accepted cultural categorical themes based on (a) the way people think, (b) their values, (c) assumptions, and (d) how they process information with the goal to foster the improvement of organizational performance (Cameron & Quinn, 2005; Yu & Wu, 2009). The desire to improve organizational performance is the motivational basis of UPB (Umphress & Bingham, 2011; Umphress et al., 2010). The CVF has become the dominant model for conducting quantitative research on organizational culture (Yu & Wu, 2009). The OCAI (Cameron & Quinn, 2005) has been widely used and found to have high internal reliability with an alpha coefficients ranging from .74 to .79 for clan culture, ranging from .79 to .80 for adhocracy culture, ranging from .73 to .76 for hierarchy culture, and ranging from .71 to .77 for market culture (Cameron & Quinn, 2005; Quinn & Spreitzer, 1991; Yeung, Brockbank, & Ulrich, 1991).

Another measure of organizational culture that is based on the CVF is the culture scale (Deshpande, Farley, & Webster, 1993). While the culture scale (Deshpande et al., 1993) is shorter than the OCAI (Cameron & Quinn, 2005), reported reliability estimates are much lower (see Table 5). Therefore, the OCAI (Cameron & Quinn, 2005) was the most relevant organizational culture scale to the study. The OCAI (Cameron & Quinn, 2005) also provided a good fit for the organizational types of interest based on the contradicting UPB studies (Cameron & Quinn, 2005; Matherne & Litchfield, 2012; Schutts & Shelley, 2014). The description of the clan culture fit the sample of fraternity/sorority students and the hierarchy culture fit the sample of restaurant workers (Cameron & Quinn, 2005; Matherne & Litchfield, 2012; Schutts & Shelley, 2014).

Organizational Culture was measured with the OCAI (Cameron & Quinn, 2005). The scale has been validated with a 5-point Likert-type scale as well as 7-point Likert-type scale (Cameron & Quinn, 2005). For purposes of the present study, the 5-point Likert-type scale with 1 indicating *strongly disagree* and 5 indicating *strongly agree* was chosen as it is the most commonly used Likert-type scale option for this scale (Cameron & Quinn, 2005; DiStefano & Motl, 2006; Oney-Yazıcı, Giritli, Topcu-Oraz, & Acar, 2007; Padma & Nair, 2009; Shurbagi & Zahari, 2012; Zahari & Shurbagi, 2012). The scale consists of four subscales with six items each. The clan culture subscale asks respondents to indicate how much they agree with statements such as “The glue that holds the organization together is loyalty and mutual trust. Commitment to this organization runs high.” The adhocracy culture subscale asks respondents to indicate how much they agree with statements such as “The glue that holds the organization together is commitment to innovation and development. There is an emphasis on being

on the cutting edge.” The market culture subscale asks respondents to indicate how much they agree with statements such as “The glue that holds the organization together is the emphasis on achievement and goal accomplishment. Aggressiveness and winning are common themes.” The hierarchy culture subscale asks respondents to indicate how much they agree with statements such as “The glue that holds the organization together is formal rules and policies. Maintaining a smooth-running organization is important.”

The first-order factor structure of the four subscales has been demonstrated with factor loadings ranging from .56 to .79 (Cameron & Quinn, 2005; Heritage et al., 2014). The four subscales have adequate reliability with reported coefficient alpha values for clan culture ranging from .70 to .86, for adhocracy culture from .67 to .86, for market culture from .71 to .84, and for hierarchy culture from .63 to .95 (Cameron & Quinn, 2005; DiStefano & Motl, 2006; Padma & Nair, 2009; Shurbagi & Zahari, 2012). The scale has shown to possess convergent as well as discriminant validity through the multitrait-multimethod technique by using different types of response scales for the OCAI. Organizational culture was measured using an ipsative scale as well as a 5-point Likert-type scale. Convergent validity was supported due to all diagonal correlation coefficients in the multitrait-multimethod matrix being significantly different from zero ( $p < .001$ ) ranging from .212 to .515. (Quinn & Spreitzer, 1991). Discriminant validity was demonstrated based on correlations that were higher for scales of the same culture type measured by separate methods than for scales of different culture types measured by the same method (Quinn & Spreitzer, 1991).

## **Organizational Commitment**

In the UPB literature, Matherne and Litchfield (2012) operationalized organizational commitment using one component, affective commitment, of the three-component model of organizational commitment (Meyer et al., 1993). Schutts and Shelley (2014) utilized the shortened version of the organizational commitment questionnaire that only contained the positively worded items of the original scale (Mowday, Porter, & Steers, 1982; Mowday et al., 1979). The organizational commitment questionnaire is a scale that solely focuses on affective commitment (Mowday et al., 1979). The affective commitment scale of the three-component model of organizational commitment (Meyer et al., 1993) was based on the organizational commitment questionnaire and is considered a refined measure of affective commitment (Ghosh & Swamy, 2014; Meyer & Allen, 1991). Therefore, Meyer et al. (1993) three-component model of organizational commitment was the most relevant affective organizational commitment scale to the study.

The affective commitment subscale of the three-component model of organizational commitment (Meyer et al., 1993) was used to measure affective organizational commitment. The affective commitment subscale consists of six items and is anchored on a 7-point Likert-type scale, with 1 indicating *strongly disagree* and 7 indicating *strongly agree*. The affective commitment subscale asks respondents to indicate how much they agree with statements such as “would be very happy to spend the rest of my career with this organization.” The first-order factor structure of the affective commitment subscale has been documented based on model fit indices with the best fitting model having affective, normative, and continuance commitment loading on

separate factors (Dunham, Grube, & Castaneda, 1994; Hackett, Bycio, & Hausdorf, 1994; Meyer & Allen, 1990; Meyer et al., 1993). Reported factor loadings ranged from .68 to .87 (Meyer & Allen, 1990; Xu & Bassham, 2010). The affective commitment subscale has adequate reliability with reported coefficient alpha values ranging from .70 to .87 (Allen & Meyer, 1990; Meyer & Allen, 1997; Meyer et al., 1993; Meyer et al., 2002; Padma & Nair, 2009). Discriminant validity has been shown to exist between the affective organizational commitment and career commitment (Cohen, 1999). In addition, convergent validity has been shown to exist between the affective commitment and organizational commitment measured by Mowday et al.'s (1979) organizational commitment questionnaire (Meyer et al., 2002).

### **Control Variables**

Based on the literature on UPB, diverse variables were considered as controls. The consideration of potential control variables was based on significant associations with UPB based on the literature. Therefore, the inclusion of potential control variables in the data analysis was based on a significant correlation with UPB. Control variables should only be included if a significant correlation with the dependent variable has been identified to avoid spurious suppression through control variables (Becker 2005). Several demographic variables and one construct, social desirability, were considered.

**Demographics.** Previous studies on UPB have assessed diverse demographics as control variables such as age, gender, hours worked (part-time/full-time), position (manager/non-manager), and tenure (Castille et al., 2016; Chen et al., 2016; Effelsberg et al., 2014; Effelsberg & Solga, 2015; Kalshoven et al., 2016; Kong, 2016; Lee et al., 2017; Matherne & Litchfield, 2012; Miao et al., 2013; Tian & Peterson, 2016; Umphress et al.,

2010; Xiaocun, 2015). Age has not been found to be a significant control for UPB (Castille et al., 2016; Effelsberg et al., 2014; Kalshoven et al., 2016; Lee et al., 2017; Matherne & Litchfield, 2012; Tian & Peterson, 2016; Umphress et al., 2010; Xiaocun, 2015). In controlling for gender, two studies found that females were less likely to engage in UPB ( $\beta = -.17, p \leq .05$ ; Kalshoven et al., 2016;  $\beta = -.15, p \leq .01$ ; Tian & Peterson, 2016), which warranted the inclusion of gender as control for the study even though several studies did not find this control to be significant (Castille et al., 2016; Effelsberg et al., 2014; Kong, 2016; Lee et al., 2017; Matherne & Litchfield, 2012; Miao et al., 2013; Xiaocun, 2015). Hours worked (part-time/full-time) has not been found to be a significant control for UPB (Matherne & Litchfield, 2012). The reported correlation ( $\alpha = .087$ ) between hours worked and UPB was positive but statistically insignificant (Matherne & Litchfield, 2012). In addition, the results of a hierarchical regression analysis reported an insignificant regression coefficient ( $\beta = .135$ ; Matherne & Litchfield, 2012). Position (manager/non-manager) has not been found to be a significant control for UPB (Effelsberg & Solga, 2015; Kong, 2016; Matherne & Litchfield, 2012; Umphress et al., 2010). However, a UPB study assessing only managers, found that managers at higher managerial levels were more likely to engage in UPB ( $\beta = .20, p \leq .01$ ; Miao et al., 2013). Nevertheless, managerial level was not considered as a control for the study, because the study's population solely consisted of nonmanagement employees. Although several studies assessed tenure as control (Castille et al., 2016; Effelsberg et al., 2014; Kong, 2016; Lee et al., 2017; Matherne & Litchfield, 2012), only one study found tenure to be significant ( $\beta = -.39, p \leq .01$ ; Kalshoven et al., 2016). The significant finding warranted the inclusion of tenure as control variable for the study.

**Social desirability.** Social desirability is defined as “the tendency of individuals to present themselves favorably with respect to current social norms and standards” (Zerbe & Paulhus, 1987, p. 250). The tendency of individuals to respond in a way that is socially desirable can contaminate the true relationship between variables by inflating the relationship between the predictor and criterion variables (Fernandes & Randall, 1992; Podsakoff et al., 2003; Triki et al., 2015; Zerbe & Paulhus, 1987). When self-reported data is used, ethics-related variables can be affected by social desirability response bias and therefore should be controlled for in ethics-related research (Podsakoff et al., 2003; Triki et al., 2015; Zerbe & Paulhus, 1987).

Three UPB studies controlled for social desirability by either adding a shortened version of Paulhus’ (1991) impression management subscale to their regression analyses (Chen et al., 2016; Umphress et al., 2010) or by assessing the presence of a method effect due to impression management (Castille et al., 2016). While no method effect due to impression management was found (Castille et al., 2016), impression management was found to be a significant control variable in the other two UPB studies ( $\beta = .20, p \leq .05$ ; Chen et al., 2016;  $\beta = .21, p \leq .01$ ; Umphress et al., 2010).

A 10-item short version of Paulhus’ (1991) impression management subscale of the balanced inventory of desirable responding was used to control for social desirability response bias that has been validated with over 12,000 respondents across 26 countries (Steenkamp, De Long, & Baumgartner, 2010). The impression management subscale represents the traditional view of social desirability response bias and assesses whether “subjects are purposefully tailoring their answers to create the most positive social image” (Paulhus, 1991, p. 21). The scale was chosen because it has been used in

previous UPB studies and showed adequate reliability with a coefficient alpha of .82 (Chen et al., 2016; Umphress et al., 2010). In addition, consisting of 10 items, the scale is reasonably short to reduce respondent dropout (Steenkamp et al., 2010). The scale is anchored on a 5-point Likert-type scale, with 1 indicating *strongly disagree* and 5 indicating *strongly agree*. The impression management scale asks respondents to indicate how much they agree with statements such as “I always obey laws, even if I am unlikely to get caught.” The first-order factor structure of the 10-item short version of the impression management scale was documented by Steenkamp et al. (2010) with factor loadings ranging from .55 to .61 (Hart, Ritchie, Hepper, & Gebauer, 2015). Discriminant validity of the impression management scale has been shown to exist with self-deception (Paulhus, 1991). Convergent validity of the impression management scale was found with the Marlow-Crowne Social Desirability Scale (Barger, 2002; Paulhus, 1991; Steenkamp et al., 2010).

### **Survey Design**

The online survey platform Qualtrics® was utilized to collect data via a three-wave survey. The three surveys encompassed a screening survey to identify respondents that meet the sample requirements (Survey 1), the main survey consisting of the scales (Survey 2), and a UPB follow-up survey to measure the dependent variable at a separate point in time (Survey 3). The surveys were accessible via unique hyperlinks that were published as a Human Intelligence Task (HIT) on MTurk®.

The three surveys had several design elements in common. Each survey had a bot check as a screening question with the purpose to sort out bots from participating in the survey (Rouse, 2015). MTurk® (2017) does not condone the use of bots. All items were

designed to present the respondents with answer choices from which they were required to choose (i.e., forced response) and with only one possible answer for each question to avoid issues of missing data (Wolf et al., 2013). In addition, participants were informed that there are no right or wrong answers to reduce evaluation apprehension (Podsakoff et al., 2003). No back button was available to avoid participants changing their answers from their original selection and thus avoiding the common method bias of consistency motif (Podsakoff et al., 2012). The likelihood of non-response was controlled by having The University of Texas at Tyler's banner placed at the top of the survey screen to indicate official sponsorship in addition to the implementation of a forced-response feature for each question (Fan & Yan, 2010). The occurrence of drop-offs was addressed by the implementation of a progress bar (Villar, Callegaro, & Yang, 2013). Repeated survey completion was restricted with the Qualtrics® survey option “prevent ballot box stuffing”, which limits internet protocol (IP) addresses to one response (Goodman et al., 2013). The end of survey messages for successfully completed surveys contained a unique code for each respondent to ensure that only valid codes were entered for payment. Respondents who did not pass the screening or did not consent, received an end of survey message that informed them that they currently do not meet the criteria to take the survey and were thanked for their time. The specific design for each of the three surveys is detailed in the following sections.

## **Survey 1**

For Survey 1, the MTurk® location requirement was set to the United States and the employment status was set to full-time to ensure the respondents are living and working in the United States. Nevertheless, participants had to answer three screening

questions before taking the survey to confirm that the MTurk® requirements worked. The first screening question ensured that the participants lived in the United States, which ensured that the location requirement set on the MTurk® worker requirements was satisfied. Screening question number two asked for full-time employment status. The purpose of the first two screening questions was to sort out respondents who should not have received access to the survey due to not meeting the specified worker requirements set on MTurk®. The third screening question was a bot check. Although MTurk® requires workers to be at least 18 years to be able to sign up, survey respondents had to confirm meeting the minimum age requirement of 18 on the informed consent form as an additional check. The informed consent form recorded the participants' consent in participating in the study and informed them of the purpose of the study, their rights, and assurance of the respondents' privacy as well as the requirements of the anonymous survey. Participants had to agree to the informed consent before taking the survey. The respondents who agreed to the informed consent were presented with the demographic questions. Demographic information that was collected, consisted of demographic and work characteristic questions such as gender, age, race/ethnicity, educational level, industry, company size, company age, tenure with the company, and manager/non-manager as they have been frequently reported related to organizational culture or UPB (Dastmalchian et al., 2000; Di Stefano et al., 2017; Heritage et al., 2014; Kalshoven et al., 2016; Lau & Ngo, 2004; Meyer et al., 1993; Padma & Nair, 2009; Ralston et al., 2006; Tian & Peterson, 2016; Xu & Bassham, 2010). The breakdown for age (i.e., 18-24, 25-54, and 55+), race/ethnicity (i.e., African American or Black, American Indian/Other Native American, Asian or Pacific Islander, Caucasian or White (other than Hispanic),

Hispanic, and other), major industry sector (i.e. goods-producing excluding agriculture, services-providing excluding special industries, and agriculture / forestry / fishing / hunting), company size (1-499 employees and 500 or more employees), and company age (less than 1 year, 1-4 years, 5-9 years, and 10 years and older) were based on the categories from the BLS (2017, abc). The breakdown for gender (i.e., male or female) and educational attainment (less than high school, high school graduate, some college, 2-year degree, 4-year degree, Master's or professional degree, and Doctorate) were based on the USCB (2017). Additional demographics questions such as tenure with company (in years) and manager/non-manager were added based on literature on organizational culture, organizational commitment, and UPB (Dastmalchian et al., 2000; Di Stefano et al., 2017; Heritage et al., 2014; Kalshoven et al., 2016; Lau & Ngo, 2004; Meyer et al., 1993; Padma & Nair, 2009; Ralston et al., 2006; Tian & Peterson, 2016; Xu & Bassham, 2010). An IMC was placed halfway through the demographics questions to confirm the engagement of the respondents (Oppenheimer et al., 2009).

No counterbalancing of items was done, although it is an acceptable method for controlling CMV (Podsakoff et al., 2003). Instead, the ordering of items for the demographic questions was as they are commonly presented in surveys (e.g., age in ascending order). The survey took less than 2-minutes to complete, which reduced the potential for survey fatigue (Dillman, 2007).

## **Survey 2**

Survey 2 included the independent variable affective commitment via two independent measures, the moderator organizational culture, the dependent variable UPB, and a measure for social desirability to control for social desirability response bias

(Castille et al., 2016; Podsakoff et al., 2012; Williams & McGonagle, 2016). The layout and placement of the survey questions was done deliberately to control for common method bias due to data for all variables being obtained from the same source (Podsakoff et al., 2003).

Table 6

*Survey 2 Instruments Order*

Order Number	Instrument
1	dependent variable: UPB
2	IMC1
3	grouping variable: organizational culture
4	IMC2
5/6	independent variable: affective commitment
5/6	independent variable: organizational commitment
7	independent variable: social desirability

*Note.* IMC = instructional manipulation check.

The first question was a bot check. The informed consent form recorded the participants' continued consent in participating in the study and informed them of the purpose of the study, their rights, and assurance of the respondents' privacy as well as the requirements of the anonymous survey. Participants had to agree to the informed consent before taking the survey. Table 6 depicts the order of instruments for Survey 2.

The scale for the dependent variable was placed before the scale for the independent variable to prevent a priming effect (Podsakoff et al., 2003; Stone, Gueatal, & McIntosh, 1984). To further separate the dependent variable from the independent variable, the grouping variable with the items for the organizational culture scale was placed between the dependent and the independent variable (Podsakoff et al., 2003).

Oppenheimer et al. (2009) suggested using the IMCs early to “convert satisficing participants into diligent participants” and thus preventing the need to remove data of respondents with failed IMCs (p. 871). Based on this information, an IMC was placed after the items of the UPB scale to confirm respondents’ engagement (Oppenheimer et al., 2009). A second IMC was placed right after the organizational culture scale to confirm the continued engagement of the respondents (Oppenheimer et al., 2009). The remaining order of the survey included the independent variable items of the affective commitment scale, followed by the scale items for organizational commitment, and lastly the social desirability response bias items. The shortened organizational commitment questionnaire (Mowday et al., 1979) that was added to this survey was used to measure organizational commitment and to collect additional data for analyses beyond this study. The affective commitment scale and the organizational commitment scale were counterbalanced to minimize scale order effects (Gerner & Wilson, 2005). The social desirability response bias items were placed at the end of the survey to prevent a priming effect that influences respondents’ answers to subsequent questions such as the UPB scale (Podsakoff et al., 2003; Williams, Hartman, & Cavazotte, 2010; Williams & McGonagle, 2016).

No counterbalancing of scale items was done, although it is an acceptable method for controlling CMV (Podsakoff et al., 2003). Instead, scale anchors and ordering of items were not altered to avoid changing the meaning of the constructs or compromise the validity of the scales (Podsakoff et al., 2003). The survey took less than 5-minutes to complete, which reduced the potential for survey fatigue (Dillman, 2007).

### **Survey 3**

In Survey 3, the UPB scale for the dependent variable was collected again to avoid the common method bias regarding measurement context due to collecting the independent variable and the dependent variable at the same point in time (Podsakoff et al., 2003). The first question was a bot check. The informed consent form recorded the participants' ongoing consent in participating in the study and informed them of the purpose of the study, their rights, and assurance of the respondents' privacy as well as the requirements of the anonymous survey. Participants had to agree to the informed consent before taking the survey. The UPB scale for the dependent variable was placed after the informed consent. No counterbalancing of items was done (Podsakoff et al., 2003). Instead, scale anchors and ordering of items was not altered to avoid changing the meaning of the constructs or compromise the validity of the scales (Podsakoff et al., 2003). The survey took less than 2-minutes to complete, which reduced the potential for survey fatigue (Dillman, 2007).

### **Data Collection**

Before the data collection process, institutional review board (IRB) approval was obtained from The University of Texas at Tyler. After the committee approved the dissertation proposal, the IRB documentation was submitted. The online survey platform Qualtrics® was utilized to collect data via a three-wave survey. Study participants were recruited with the assistance of MTurk® and asked to complete three multiple-choice surveys. Surveys were posted as HITs that allowed short survey descriptions on the HIT screens. A hyperlink to the surveys on the Qualtrics® survey tool was provided on the HIT screen along with the survey topic, and the time requirements as well as information

on the required data quality. The offered financial incentives for completing the anonymous surveys were established by scanning solicitations on MTurk® for surveys at the time with comparable length. Compensation has been shown to influence the data collection speed while having no significant influence on data quality (Buhrmester et al., 2011).

As part of creating the HITs, the number of unique worker assignments (i.e., the desired number of completed surveys) was set to 500. For each survey, multiple batches with 500 assignments each were deployed, one every 2 days of the data collection process to ensure there was a batch located near the top of the HIT list throughout the data collection process. Older batches that produced no more responses were closed before being replaced with new batches. Repeated participation of MTurk® workers was prevented by modifying the worker requirements before a new batch was published. The specific data collection procedures unique to each of the three surveys are detailed in the following sections.

## **Survey 1**

For Survey 1, a HIT was created in MTurk® with several consecutive batches that provided the title, “Answer a 1-2 minute multiple-choice survey about you and your work environment - Survey 1 of 3;” the description “Give us some general information about you, your job, and your organization;” and the keywords “survey, organization, job, work environment, demographics.” Additional worker requirements were selected: location of U.S., employment status of full-time, and a HIT approval rate greater than 95 in order to capture a large breadth of workers while still ensuring to get quality data (Berinsky et al., 2012; Chambers & Nimon, 2018). The HIT visibility was automatically set to private due

to the worker requirement selection, which allowed only workers who met the selected requirements to see and complete the HIT. Participants received a minimal financial incentive of \$0.10 for completing the anonymous survey, which was established as customary payment.

The data were continuously cleaned to assess the number of useful responses. The data collection process was concluded once a minimum of 2,000 useful responses was achieved. The estimated time required for the data collection for Survey 1 was 4 weeks.

## **Survey 2**

Survey 2 was deployed after the data of Survey 1 was analyzed. Survey 2 was only sent to qualified workers based on their responses to Survey 1. Respondents had to meet the sample requirements of being nonmanagement full-time U.S. employees between the ages of 18 and 54 working at organizations in the service sector. For Survey 2, a HIT was created in MTurk® with several consecutive batches that provided the title, “Answer a 3-5 minute multiple-choice survey about you and your work environment - Survey 2 of 3;” the description “Give us some general information about you, your job, and your organization;” and the keywords “survey, organization, job, work environment, demographics.” One worker requirement (i.e., completed Survey 1) was selected to ensure that only qualified workers were able to complete Survey 2 based on their responses to Survey 1.

The HIT visibility was set to public, so all workers were able to see the HIT. In addition, this setting allowed the researcher to preview the HIT and to retrieve the URL which was provided to the qualified workers in an e-mail invitation. An email invitation

was sent based on the individuals' unique worker IDs who completed Survey 1 and met the sample requirements. The worker ID is a unique worker identification number each MTurk® worker gets assigned when creating a worker account (Mason & Suri, 2012). The software R® was used to send individual e-mail invitations to qualified MTurk® workers. Participants received a minimal financial incentive of \$0.50 for completing the anonymous survey, which was established as customary payment.

Data were continuously cleaned to assess the number of useful responses. The data collection process for Survey 2 was concluded once a minimum of 1,000 useful responses, with a minimum of 417 responses for each cultural type was achieved. If the initial response rate had been below the expected response rate of 60 to 75% (Berinsky et al., 2012; Buhrmester et al., 2011; Stoycheff, 2016), a follow-up e-mail invitation was to be sent to the unique worker IDs of those who qualified for Survey 2 but had not yet completed it. The estimated time required for the data collection for Survey 2 was 3 weeks.

### **Survey 3**

Survey 3 was deployed after the results of Survey 2 were analyzed. Keeping the time lag short is crucial to reduce the risk of contamination and attrition (Podsakoff et al., 2003). Studies assessing MTurk® response rates for longitudinal surveys and test-retest reliability used time lags of 3 days and 3 weeks respectively (Buhrmester et al., 2011; Stoycheff, 2016). Based on this information, a 1-week time lag was used between the completion of Survey 2 and contacting respondents to complete Survey 3.

For Survey 3, a HIT was created in MTurk® with several consecutive batches that provided the title, "Answer a 1-2 minute multiple-choice survey about you and your work

environment - Survey 3 of 3”; the description “Give us some general information about you, your job, and your organization”; and the keywords “survey, organization, job, work environment, demographics.” One worker requirement (i.e., completed Survey 2) was selected to ensure that only qualified workers were able to complete Survey 3 based on their responses to Survey 2. Qualified workers needed to meet the sample requirements of working at an organization with either clan or hierarchy as the dominant culture. The HIT visibility was set to public, so all the workers were able to see the HIT. In addition, this setting allowed the researcher to preview the HIT and to retrieve the URL, which was provided to the qualified workers in an e-mail invitation. The participants received a minimal financial incentive of \$0.25 for completing the anonymous survey, which was established as a higher than average payment. The higher than average payment for Survey 3 was chosen to encourage respondents to follow through with the three-part survey.

Data were continuously cleaned to assess the number of useful responses. The data collection process was concluded once a minimum of 500 useful responses with a minimum of 250 responses for each cultural type was achieved. If the initial response rate had been below the expected response rate of 60 to 75% (Berinsky et al., 2012; Buhrmester et al., 2011; Stoycheff, 2016), a follow-up e-mail invitation was to be sent to the unique worker IDs of those who qualified for Survey 3 but had not yet completed it. The estimated time required for the data collection for Survey 3 was two weeks. In the case that not enough responses were collected in Survey 3, the UPB data collected in Survey 2 was to be used as a backup.

## **Data Analysis**

The data analysis process consisted of several sequential procedures. The first step involved the cleaning of the data, followed by the assessment of group equivalency. The next two steps consisted of testing the statistical assumptions and determining construct validity. Once these steps were completed, the culture type comparison was conducted. The last step addressed common method variance in case not enough responses were to be collected for UPB in Survey 3 and UPB data collected in Survey 2 needed to be used as backup. These steps are addressed below in more detail.

### **Data Cleaning**

The collected data were retrieved from Qualtrics® as comma separated values (csv) file for analysis using the software packages R® 3.5.0 and IBM® SPSS® AMOS 25.0.0. The data analysis and data storage were conducted on a password protected computer. The first step of the data cleaning process involved the removal of the respondents' IP addresses to ensure the anonymity of the survey participants. Incomplete surveys were removed as well. Further data cleaning of each of the three surveys is detailed in the following sections.

**Survey 1.** Responses that did not pass the screening questions were removed to limit data to cases that met the sample requirements. Responses that passed the screening questions, but did not agree to the informed consent were removed as well. All questions in the survey were required to be answered, therefore no missing data remained at this point for respondents who completed the survey. Furthermore, all responses that did not pass the IMC were retained, but close attention was paid to the provided responses to assess whether respondents who did not pass were fully engaged (Oppenheimer et al.,

2009). Straight-lining was not considered as data removal criteria due to the lack of full engagement of respondents, because the survey did not contain scale items as only demographic information was collected in Survey 1 (Cole, McCormick, & Gonyea, 2012). Additional responses that did not meet the sample requirements such as 55 years or older, an industry sector other than the service industry, or a manager were removed as well.

**Survey 2.** Responses that did not pass the bot check were removed along with responses from participants who did not agree to the informed consent. All questions in the survey were required to be answered, therefore no missing data remained at this point for respondents who completed the survey. Furthermore, all responses that did not pass the IMCs were retained, but close attention was paid to the provided responses to assess whether respondents who did not pass were fully engaged (Oppenheimer et al., 2009). Elimination of responses with failed IMCs were assessed on a case-by-case basis because eliminating these responses could threaten external validity (Oppenheimer et al., 2009). Another indicator of respondents' lack of full engagement was based on the average survey completion time. Responses that were completed in less than two minutes were removed. Straight-lining was also considered as data removal criteria due to a lack of full engagement of respondents (Cole et al., 2012). Straight-lining exists when respondent select the same response option for all items of a scale (Cole et al., 2012). Straight-lining could be detected because the survey contained several reverse-coded items and the scale items were presented in a matrix format (Cole et al., 2012). The removal of straight-lined responses was conducted before the reverse coding because reverse coding could result in

some valid straight-lined responses (Cole et al., 2012). Reverse coding was conducted as necessary to allow for the interpretation of the relationship between the variables.

Once the data were considered sufficiently cleaned, the collected data were split into four groups based on the identified dominant organizational culture. Findings of studies on several thousand organizations indicated that 80% of organizations identify with a dominant cultural type (Cameron & Quinn, 2005). The dominant culture is “based on the quadrant that receives the most emphasis” (Cameron & Quinn, 2005, p. 153). In addition, the strength of the dominant organizational culture increases with an increase in the obtained score (Cameron & Quinn, 2005). However, “no universal number exists for determining differences among quadrants in the competing values framework” (K. S. Cameron, personal communication, February 8, 2018). A review of the literature suggested identifying the dominant culture by selecting the cultural type with the highest mean score (Arditi, Nayak, & Damci, 2017; Berrio, 2003; Cameron & Quinn, 2005; Oney-Yazıcı, Giritli, Topcu-Oraz, & Acar, 2007; Shurbagi & Zahari, 2012; Zahari & Shurbagi, 2012). In accordance with the findings of the literature review, the dominant organizational culture of each respondent was identified by assessing the item mean scores for each cultural type. When two or more cultural types of a respondent had the same mean score, the response was removed from the data, because it did not allow for the identification of one dominant culture. In addition, responses with a dominant culture other than clan or hierarchy were removed as well, so only the responses for the two organizational cultures of interest were retained. Once the collected survey responses were sorted based on the dominant cultural type (i.e., clan and hierarchy), the number of responses per dominant cultural type was assessed to ensure that a minimum of 417

responses was available for each cultural type as described in the sample size section. If needed, additional data were collected until there was a minimum of 417 responses for each cultural type.

**Survey 3.** Responses that did not pass the bot check were removed along with responses from participants who did not agree to the informed consent. All questions in the survey were required to be answered, therefore no missing data remained at this point for respondents who completed the survey. Straight-lining was not considered as data removal criteria due to the lack of full engagement of respondents because the scale items for the UPB did not contain reverse-coded items, which allowed for valid straight-lined responses (Cole et al., 2012). Another indicator of respondents' lack of full engagement was based on the average survey completion time. Responses that were completed in less than 20 seconds were removed. Once the data for Survey 3 was considered sufficiently cleaned, the data of all three surveys were combined for the next steps of the data analysis process. At this point, responses that failed the IMCs were reviewed again for signs that indicated a lack of full engagement (Oppenheimer et al., 2009). Responses that failed more than one IMC were removed.

### **Group Equivalency**

Testing for structural invariance requires equivalent groups (Vandenberg & Lance, 2000). Industries can have prevailing organizational cultures (Cameron & Quinn, 2005). To properly assess structural invariance based on the grouping variable organizational culture (i.e., clan and hierarchy), it is important to create equivalent organizational culture groups. Equivalent organizational culture groups, which solely differ based on organizational culture, ensure that all demographics equally affect both

assessed groups. Considering the categorical nature of the demographic variables, a series of Pearson's chi-square tests were conducted on the demographic variables of gender, age, race/ethnicity, educational level, company size, company age, and tenure with the company with organizational culture (i.e., clan culture and the hierarchy culture) as the grouping variable. Results of the pilot study indicated that access to comparable groups based on these demographics was possible. The specific demographics have been chosen as they have been frequently reported related to organizational culture (Cameron & Quinn, 2005; Dastmalchian et al., 2000; Di Stefano et al., 2017; Heritage et al., 2014; Lau & Ngo, 2004; Padma & Nair, 2009; Ralston et al., 2006). Statistical significance was determined at  $p \leq .05$  and practical significance was determined at a Cramer's  $V \geq .10$  (Huck, 2012). For groups that were found statistically and practically significantly different for multiple variables, propensity score matching was utilized (Rubin, 1997).

In addition, data collection methods were employed following the recommendations of Van de Vijver and Leung (1997) that controlled for several potential group differences. The primary method for controlling for group differences is "matching of subjects [to achieve samples that are] as similar as possible in their demographic variables" (Van de Vijver & Leung, 1997, p. 45). This concept was employed in Survey 1 by identifying subjects who fit the predefined demographic profile of nonmanagement full-time U.S. employees between the ages of 18 and 54 working at organizations in the service sector with either clan or hierarchy culture as their dominant culture. Only subjects who fit the predefined demographic as determined in Survey 1 were invited to complete Survey 2 and Survey 3, the main surveys for the study (Van de Vijver & Leung, 1997).

## **Statistical Assumptions**

Once propensity score matching was completed, the data were analyzed for statistical assumptions. The statistical data analysis and SEM was conducted using IBM® SPSS® AMOS 25.0.0. software packages. Maximum likelihood was used as the estimation technique based on a covariance matrix, which assumes multivariate normality (Kline, 2016; Teo et al., 2009). For the present study, multivariate normality was assessed by computing Mardia's statistic (Kankainen, Taskinen, & Oja, 2004). A significant result of the Mardia statistic at  $p < .05$  and a critical ratio higher than 5.0 indicate a departure of multivariate normality (Byrne, 2010; Kankainen et al., 2004). In addition, the presence of multivariate outliers was assessed via the squared Mahalanobis distance ( $D^2$ ; Huck, 2012; Kline, 2016).  $D^2$  values that are distinctly different from the other  $D^2$  values are potential outliers (Byrne, 2010). Special attention was given to high  $D^2$  values with low  $p$ -values ( $p < .001$ ), which is another indicator of a potential outlier (Kline, 2016).

As a remedy in case of failure of multivariate normality, bootstrapping was performed, and the estimates were compared to the non-bootstrapped results (Kline, 2016). For the study, bootstrapping was set at a 2,000-case sampling procedure at the 95% confidence level (Kline, 2016). In the case that non-bootstrapped results are not substantively different compared to bootstrapped estimates, non-bootstrapped results are reported (Kline, 2016). Missing data were removed in the data cleaning process and was not a concern during the statistical data analysis process.

## **Construct Validity**

Before testing for measurement and structural invariance, a measurement model analysis was conducted (Byrne, 2010; Kline, 2016; Schumacker & Lomax, 2016; Thompson, 2003). Several CFAs were performed on the overall pooled sample (i.e., clan culture and hierarchy samples combined) and repeated for the clan culture and hierarchy culture sub-samples (Antonakis, Avolio, & Sivasubramaniam, 2003; Teo et al., 2009). As depicted in Figure 3, for the multi-factor models such as the initial 5-factor model and the final 4-factor model, the indicators of each respective factor were constrained to solely load on their respective factor (Antonakis et al., 2003; Byrne, 2010; Schumacker & Lomax, 2016; Thompson, 2003). In addition, all factors were allowed to correlate (Byrne, 2010; Kline, 2016; Schumacker & Lomax, 2016; Thompson, 2003). Furthermore, the error variances of the single-indicators for the demographic variables (i.e., gender and tenure) were set at .05 to account for the small errors that commonly occur when measuring demographics (Kline, 2016).

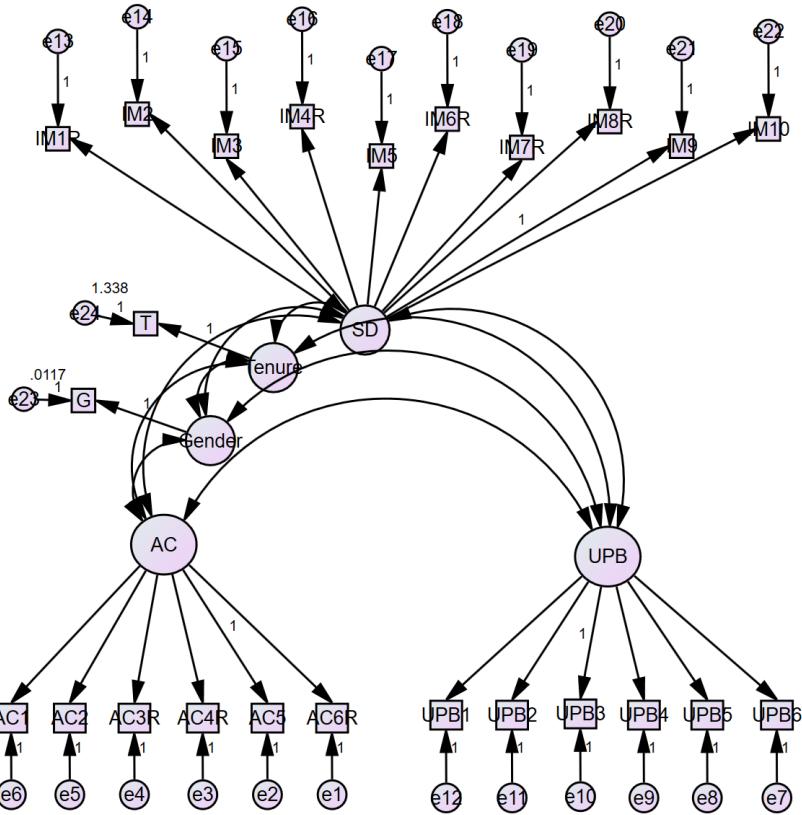


Figure 3. Initial Measurement Model. SD = Social Desirability. AC = Affective

Commitment. UPB = Unethical Pro-Organizational Behavior.

The goodness of fit for the measurement model was determined based on the following cut-off criteria: (a) the root mean squared error of approximation (RMSEA)  $\leq .08$ ; (b) the standardized root mean square residuals (SRMRs)  $\leq .08$ ; (c) Tucker-Lewis Index (TLI)  $\geq .90$ ; (d) the comparative fit index (CFI)  $\geq .90$ ; (e) the smallest value of the Akaike information criterion (AIC); and (f) the absolute correlation residuals (ACR)  $\leq .10$  (Byrne, 2010; Kline, 2016; Schumacker & Lomax, 2016). In addition, pattern and structure coefficients were assessed to determine whether the construct variable correlated most highly with its corresponding factor, as indicated by the structure coefficients (Graham, Guthrie, & Thompson, 2003). Convergent validity requires factor

loadings above the minimum threshold of .5 with a more stringent threshold being .7 but less than .95 (Bagozzi & Yi, 1988; Kline, 2016). Items that fall below the threshold of .5 were considered for removal (Bagozzi & Yi, 1988; Kline, 2016). Further statistics that were evaluated were the composite reliability (CR), the average variance extracted (AVE), and the square root of the AVE. Reliability was demonstrated for  $CR \geq .6$  and convergent validity was demonstrated for  $AVE \geq .5$  (Bagozzi & Yi, 1988). Evidence of discriminant validity was given when correlations between factors were lower than the square root of the AVE for the individual factors (Bagozzi & Yi, 1988). If the model-data fit and item-factor loadings for each of the two culture types fit the model sufficiently well, the MASI could be conducted (Antonakis et al., 2003; Byrne, 2010; Teo et al., 2009; Thompson, 2003).

### **Culture Type Comparison**

Multi-group analysis of structural invariance allows to assess whether causal relationships work in the same way across groups (Byrne, 2010; Cheung & Lau, 2011; Deng et al., 2005; Kline, 2016; Schumacker & Lomax, 2016; Teo et al., 2009; Vandenberg & Lance, 2000). The study tested for MASI by assessing whether differences in the regression weights between components of affective organizational commitment and UPB differ between the two cultural types clan and hierarchy (Byrne, 2010; Cheung & Lau, 2011; Deng et al., 2005; Kline, 2016; Schumacker & Lomax, 2016; Teo et al., 2009; Vandenberg & Lance, 2000). As discussed in more detail under the hypotheses development section in Chapter 2, the assessment of structural invariance based on regression weights across groups was chosen due to findings of contradictory regression weights in the UPB literature (Matherne & Litchfield, 2012; Schutts &

Shelley, 2014). The MASI method is a more rigorous test to assess differences in structural weights across the groups than analysis of covariance (ANCOVA) when the tested model contains latent variables (Deng et al., 2005).

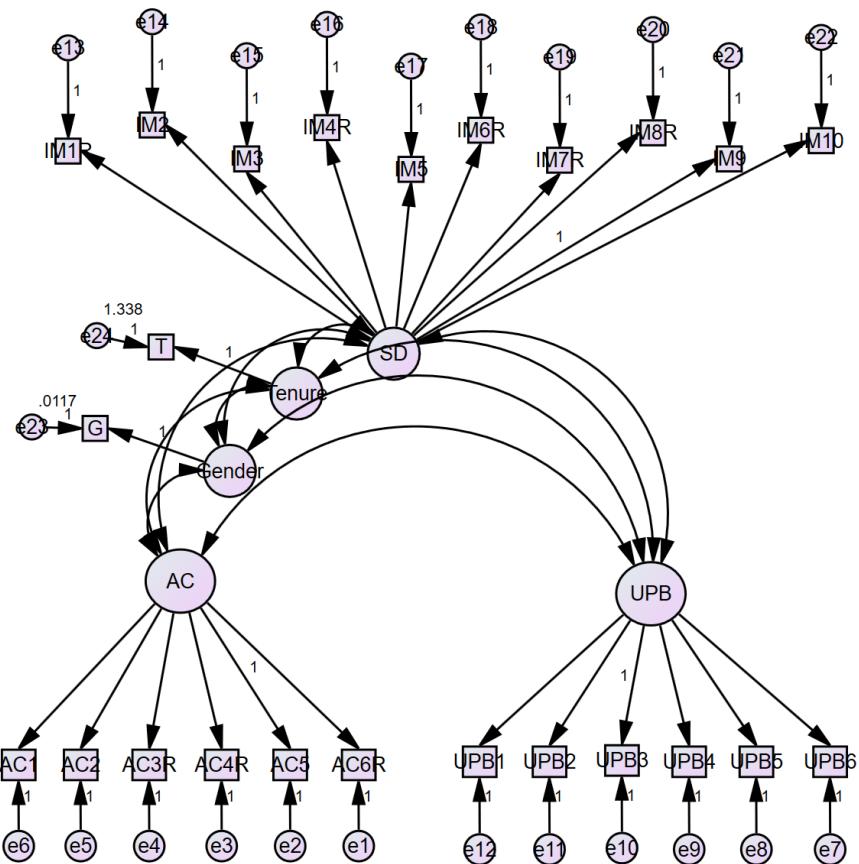
Testing for MASI first required the establishment of measurement invariance using confirmatory factor analysis (Byrne, 2010; Kline, 2016; Meredith, 1993; Schumacker & Lomax, 2016; Teo et al., 2009; Putnick & Bornstein, 2016; Vandenberg & Lance, 2000; Van de Schoot et al., 2012) to ensure that the survey measures “identical constructs with the same structure across different groups” (Van de Schoot et al., 2012, p. 486). The establishment of measurement invariance is important for psychological constructs such as organizational commitment and UPB (Rensvold & Cheung, 2001). For the purpose of this study, measurement invariance involved the hierarchical ordering of two nested models: configural invariance and metric invariance (Cheung & Lau, 2011; Deng et al., 2005; Vandenberg & Lance, 2000). Two additional steps (i.e., scalar and strict invariance) are commonly seen in the literature (Rensvold & Cheung, 2001; Schumacker & Lomax, 2016; Teo et al., 2009; Vandenberg & Lance, 2000; Van de Schoot et al., 2012). However, these two additional steps were not conducted in this study because only metric level invariance is a necessary condition for comparing path coefficients across groups (Cheung & Lau, 2011; Vandenberg & Lance, 2000). In addition, Vandenberg and Lance’s (2000) suggested assessment of invariant covariance matrices before conducting the measurement invariance steps was omitted based on contemporary recommendations (Putnick & Bornstein, 2016; Van de Schoot et al., 2012).

The testing of the two invariance models (i.e., configural and metric) was conducted by setting one factor loading per factor to 1 across the groups (Rensvold &

Cheung, 2001). Another method that is less common required standardizing the factor variances across groups (Rensvold & Cheung, 2001). This method has been deemed unnecessarily stringent and thus was not utilized in this study (Rensvold & Cheung, 2001).

The results of measurement invariance were assessed based on model fit indices as well as a change in the chi-squared value ( $\Delta\chi^2$ ) and change in the CFI value ( $\Delta\text{CFI}$ ) for the hierarchical models (Nimon & Reio, 2011; Teo et al., 2009). The change in  $\Delta\chi^2$  was determined statistically significant at  $p \leq .05$  (Teo et al., 2009; Van de Schoot et al., 2012). A  $\Delta\text{CFI} \leq -.01$  indicates practical model invariance (Cheung & Rensvold, 2002). Potential practical model noninvariance is indicated by a  $\Delta\text{CFI}$  between  $-.01$  and  $-.02$  and practical model noninvariance is indicated by a  $\Delta\text{CFI} > -.02$  (Cheung & Rensvold, 2002). The following cut-off criteria were used to determine the goodness of fit for the models: (a) RMSEA  $\leq .08$ ; (b) SRMRs  $\leq .08$ ; (c) TLI  $\geq .90$ ; (d) CFI  $\geq .90$ ; (e) the smallest value of the AIC; and (f) ACR  $\leq .10$  (Hu & Bentler, 1999; Milfont & Fischer, 2010; Nimon & Reio, 2011; Vandenberg & Lance, 2000).

**Configural invariance.** First an equal pattern baseline model was established to assess whether participants belonging to each organizational culture group (i.e., clan and hierarchy) conceptualize the same construct when responding to the scale items (Byrne, 2010; Cheung & Rensvold, 2002, Deng et al., 2005; Teo et al., 2009; Vandenberg & Lance, 2000). The test for configural invariance required the constraining of the factorial structure by fitting the two organizational culture groups to the five-factor correlated measurement model (see Figure 4; Milfont & Fischer, 2010; Teo et al., 2009; Vandenberg & Lance, 2000).



*Figure 4. Configural Invariance Model. SD = Social Desirability. AC = Affective Commitment. UPB = Unethical Pro-Organizational Behavior.*

Configural invariance was determined based on factor loadings, parameter estimates, and model fit indices (Nimon & Reio, 2012). Once configural invariance is determined, the same construct is measured across groups (Cheung, 2007; Cheung & Rensvold, 2002; Wu, Li, & Zumbo, 2007). However, if configural noninvariance is found, the pattern of factor loadings on the latent factors differ across groups (Putnick & Bornstein, 2016). In the case of configural noninvariance, either the construct has to be refined by omitting some items and retesting the model, or invariance testing has to be concluded accepting the construct as noninvariant (Putnick & Bornstein, 2016).

**Metric invariance.** Once configural invariance was established, the prerequisite for assessing metric invariance was met (Byrne, 2010; Cheung & Rensvold, 2002, Deng et al., 2005; Teo et al., 2009; Vandenberg & Lance, 2000; Wu et al., 2007). The test for metric invariance assessed whether the regression slopes were the same across the two organizational culture groups (intercepts between the groups are allowed to differ), with a one unit change in the item score leading to an equal unit change in the factor score across the two organizational culture groups for like items (Rensvold & Cheung, 2001; Wu et al., 2007).

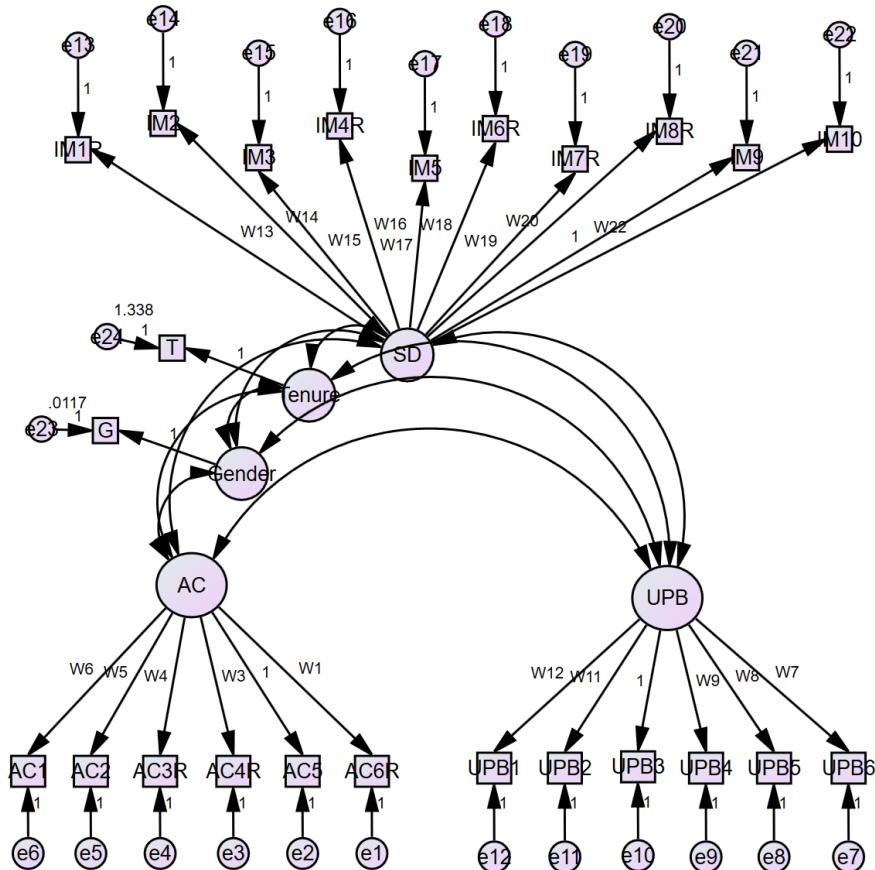


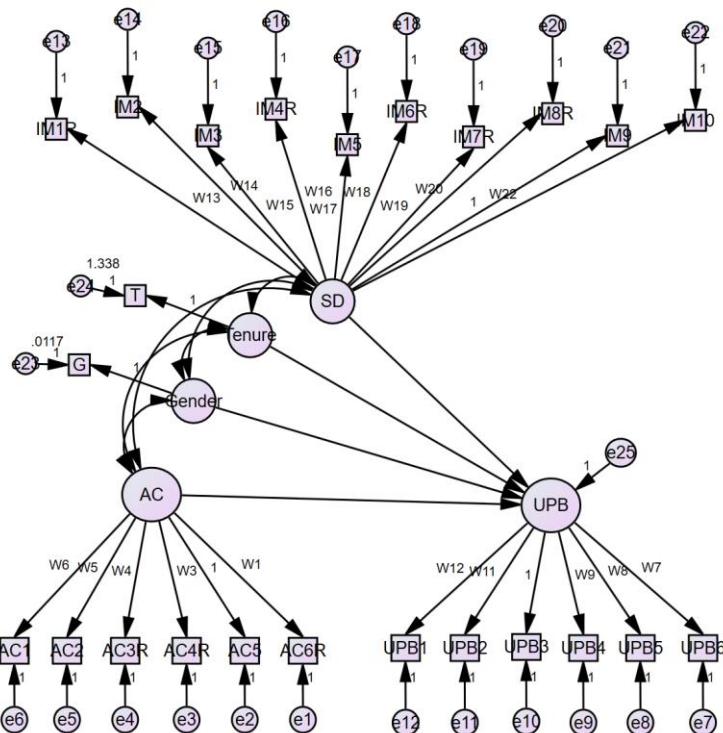
Figure 5. Metric Invariance Model. SD = Social Desirability. AC = Affective Commitment. UPB = Unethical Pro-Organizational Behavior.

For the test for metric invariance, the model from the configural invariance step was used and factor loadings were constrained to be equal for like items across the two organizational culture groups (see Figure 5; Byrne, 2010; Milfont & Fischer, 2010; Teo et al., 2009; Vandenberg & Lance, 2000). Metric invariance was determined by comparing the model fit indices with the configural model fit indices (Nimon & Reio, 2012; Putnick & Bornstein, 2016). Once metric invariance was determined, cross-group comparison of correlations was possible (Cheung, 2007; Cheung & Rensvold, 2002; Putnick & Bornstein, 2016; Vandenberg & Lance, 2000; Wu et al., 2007).

**Structural invariance.** Once metric level measurement invariance was established, structural invariance was tested by assessing whether differences in the regression weights across cultural types were statistically and practically significant (Cheung & Lau, 2011; Deng et al., 2005; Kline, 2016; Schumacker & Lomax, 2016; Teo et al., 2009; Vandenberg & Lance, 2000). Multi-group structural invariance is given when the comparison between an unconstrained and a constrained structural model yields a non-significant  $\chi^2$  and CFI difference (Cheung & Rensvold, 1999; Kline, 2016; Schumacker & Lomax, 2016; Teo et al., 2009). The  $\Delta\chi^2$  was determined statistically significant at  $p \leq .05$  and the  $\Delta\text{CFI}$  was determined practically significant at  $> -.01$  (Hirschfeld & Brown, 2009; McBride-Chang & Manis, 1996; Teo et al., 2009).

The unconstrained structural baseline model (see Figure 6) was established by using the metric invariance model and replacing the correlations between the predictors (i.e., social desirability, affective commitment, gender, and tenure) and the criterion variable UPB with structural paths (Deng et al., 2005; Hirschfeld & Brown, 2009; Teo et al., 2009;). Keeping the constraints of the measurement model allowed for the best

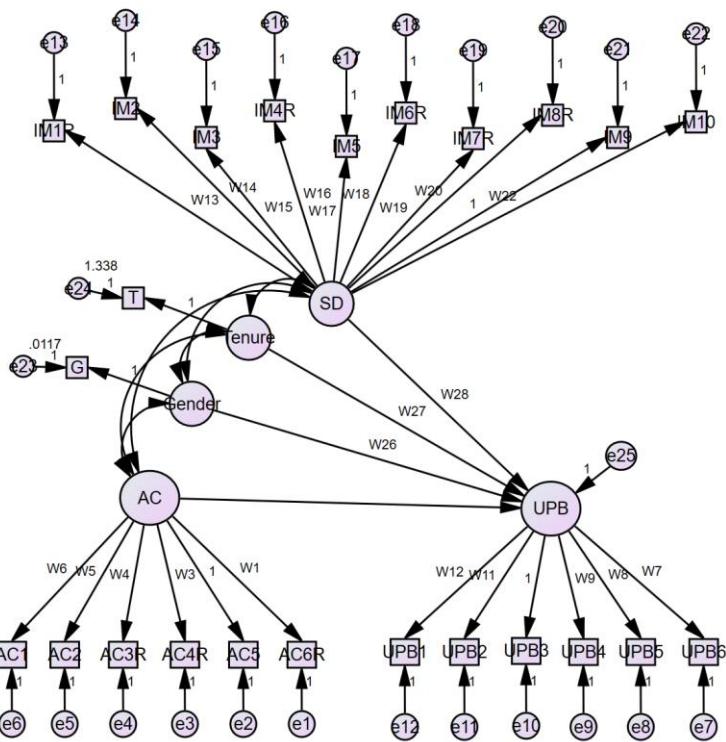
estimation of the structural weights across groups (Deng et al., 2005). Model fit was determined based on the model  $\chi^2$  test statistic and the following cut-off criteria: (a) RMSEA  $\leq .08$ ; (b) SRMRs  $\leq .08$ ; (c) TLI  $\geq .90$ ; (d) CFI  $\geq .90$ ; and (e) the smallest value of the AIC (Hu & Bentler, 1999; Kline, 2016; Schumacker & Lomax, 2016).



*Figure 6.* Unconstrained Structural Baseline Model. SD = Social Desirability. AC = Affective Commitment. UPB = Unethical Pro-Organizational Behavior.

Structural noninvariance was expected to be found when testing the structural invariance of affective organizational commitment across the different cultural types with a positive path coefficient between affective commitment and UPB for the hierarchy culture and a negative path coefficient for the clan culture. The assumption was based on contradictory research findings on UPB (Matherne & Litchfield, 2012; Schutts &

Shelley, 2014) and the support in the literature that different types of organizational culture can either encourage or discourage ethical behavior (Di Stefano et al., 2017; Pilch & Turska, 2014). Therefore, the unconstrained structural baseline model was first compared to a partially constrained structural model (see Figure 7), which had the structural weights for social desirability, tenure, and gender set equal across the groups (Kline, 2016; McBride-Chang & Manis, 1996; Teo et al., 2009). The results of structural invariance was assessed by comparing the model fit indices with the structural baseline model fit indices as well as the  $\Delta\chi^2$  and  $\Delta\text{CFI}$  values (Kline, 2016; Schumacker & Lomax, 2016; McBride-Chang & Manis, 1996; Teo et al., 2009).



*Figure 7. Partially Constrained Structural Model. SD = Social Desirability. AC = Affective Commitment. UPB = Unethical Pro-Organizational Behavior.*

Next, the partially constrained structural model was compared to a fully constrained structural model (see Figure 8; Deng et al., 2005; Hirschfeld & Brown, 2009; McBride-Chang & Manis, 1996; Teo et al., 2009). Identification of the better fitting model was assessed by comparing the model fit indices as well as the  $\Delta\chi^2$  and  $\Delta\text{CFI}$  values.

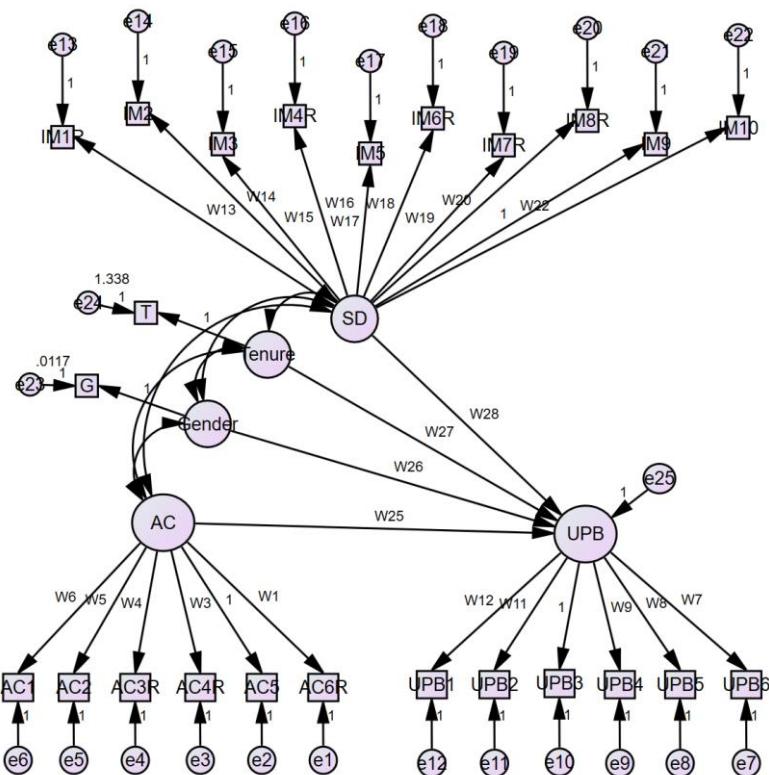
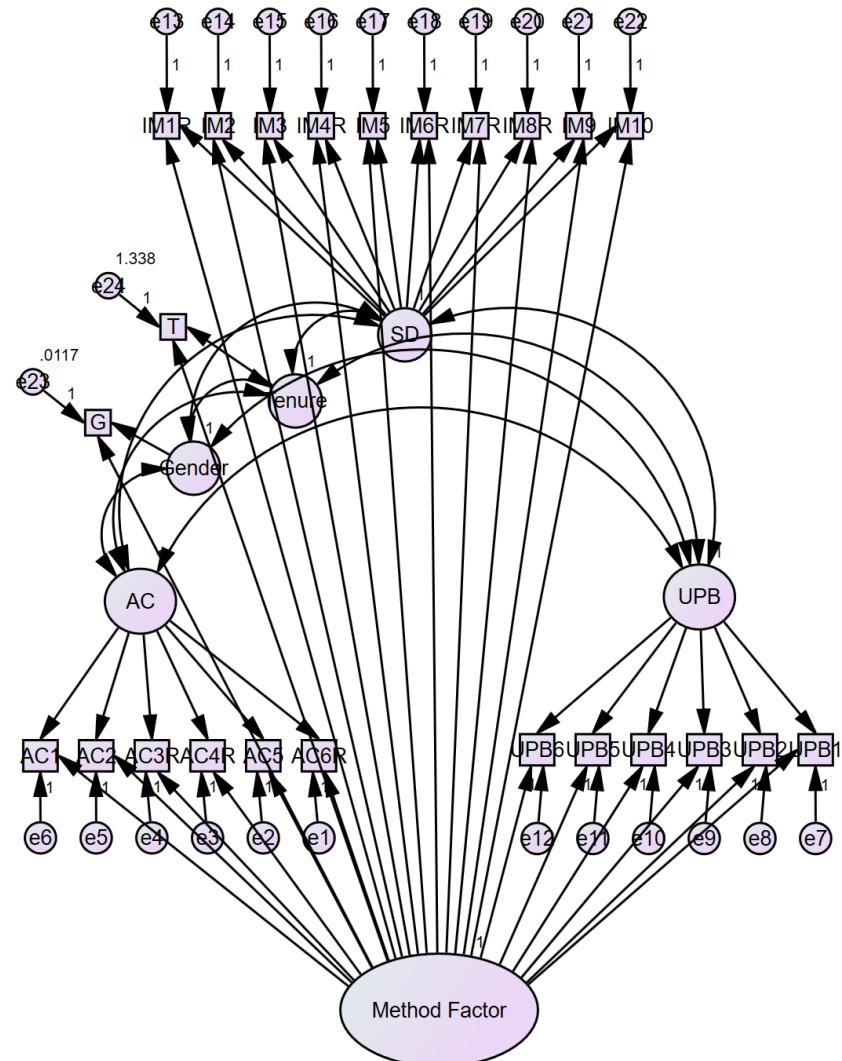


Figure 8. Fully Constrained Structural Model. SD = Social Desirability. AC = Affective Commitment. UPB = Unethical Pro-Organizational Behavior.

## Common Method Variance

The dependent variable UPB was collected separately from the other variables in Survey 3 to control for common method bias (Podsakoff et al., 2003). If not enough responses were collected for UPB in Survey 3, the UPB data collected in Survey 2 would have needed to be used as a backup. If the UPB data from Survey 2 needed to be used, the unmeasured latent method factor technique was to be used to control for common method bias (Podsakoff et al., 2003).



*Figure 9.* Unmeasured Latent Method Factor Model. SD = Social Desirability. AC = Affective Commitment. UPB = Unethical Pro-Organizational Behavior.

A first-order method factor was added to the measurement model (see Figure 9) with the item loading on their theoretical constructs as well as on the method factor. Common method variance was determined based on a significant difference in the standardized regression weights between the measurement model and the model with the method factor (Podsakoff et al., 2003). If no evidence of common method bias is found, the method factor indicator is not to be included in the structural model (Podsakoff et al., 2003).

### **Summary of the Chapter**

This Chapter presented the design and method for the study. The chapter covered the purpose of the study, the research hypotheses, an overview of the pilot study, the design of the main study, a description of the population and the sample along with sample representativeness, the instrumentation for the survey, the survey design, the data collection procedures, and the data analysis procedures including data cleaning, group equivalency, statistical assumptions, construct validity, culture type comparison, and common method variance.

## Chapter 4 - Results

### **Introduction**

This chapter reports the results for the study. The following sections are included: description of the collected data, results of data cleaning, comparisons of organizational cultures, sample representativeness, statistical assumptions, measurement models, measurement invariance testing, structural invariance testing, descriptive statistics, and a hypotheses discussion. The chapter concludes with a summary.

### **Data Analysis Results**

The purpose of the present study was to empirically assess the structural invariance of affective organizational commitment on UPB across the two organizational cultural types of clan and hierarchy. The data were collected based on a three-wave survey research method. The online survey platform Qualtrics® was utilized to collect data at three points in time. Study participants were recruited with the assistance of MTurk® and asked to complete the anonymous surveys. Respondents' data across the three waves were matched via the MTurk® WorkerID.

### **Data Collection and Participants**

The data collection took place between May 11, 2018, and July 22, 2018. Demographics and work characteristic information were collected in Survey 1 to identify respondents who met the sample requirements. Survey 2 was only sent to qualified workers based on their responses to Survey 1 and included the items for the independent

variable affective commitment, the moderator organizational culture, the dependent variable UPB, and a measure for social desirability to control for social desirability response bias (Castille et al., 2016; Podsakoff et al., 2003; Podsakoff et al., 2012). In Survey 3, the UPB scale for the dependent variable was collected again to avoid the common method bias regarding measurement context due to collecting the independent variable and the dependent variable at the same point in time (Podsakoff et al., 2003).

Table 7

*Summary of Data Collection for the Three Surveys*

Survey	Accessed Survey Links	Paid in MTurk	Qualified Respondents	Invited to the Next Survey
Survey 1	5,753	4,526	2,084	2,084
Survey 2	1,808	1,639	1,229	1,229
Clan			388	388
Hierarchy			428	428
Market			358	358
Adhocracy			55	55
Survey 3	1,074	978	653	
Clan			309	
Hierarchy			344	

*Note.* The difference between the number who accessed the survey link and the number paid in MTurk® represents the number of cases removed due to failed bot, non-consent, or incomplete survey.

For all three surveys, the collected data were retrieved from Qualtrics® as a csv file. A csv file was also retrieved from MTurk® containing the number of workers who submitted a unique payment code. The response ID code from the Qualtrics® results file was matched to a unique payment code from the MTurk® file to check that valid codes had been entered. In addition, the response ID code from the Qualtrics® results file was matched to the WorkerID from the MTurk® file, which was used to match responses

across the three waves. The retrieved data from Qualtrics® was further cleaned to prepare for further data analysis using the software packages R® 3.5.0 and IBM® SPSS® 25.0.0.

Table 7 provides an overview of the total number of participants who accessed and completed each survey as well as the number of individuals invited to take Survey 1 and Survey 2. The specific data collection results unique to each of the three surveys are detailed in the following sections.

**Survey 1.** For Survey 1, a total of 5,753 responses were collected. The first step of the data cleaning process involved the removal of the respondents' IP addresses to ensure the anonymity of the survey participants. Responses that did not pass the screening questions were removed to limit data to cases that met the sample requirements. Although worker requirements were set as described in the survey design section for Survey 1, 10 responses were removed that failed the screening for living in the United States along with 19 responses that failed the screening for full-time employment status. A total of 878 responses were removed that failed the bot check. Responses that passed the screening questions, but the participants did not agree to the informed consent ( $n = 15$ ) were removed as well. All questions in the survey were required to be answered, therefore no missing data should have remained at this point unless the respondents exited the survey without completing the survey. A total of 305 incomplete responses were removed. Responses that did not pass the IMC were retained as an elimination decision was made after the data for all three surveys were combined. Responses that missed more than one out of three IMCs were eliminated based on the assumption that the respondents were not fully engaged (Oppenheimer et al., 2009). Straight-lining was not considered as data removal criteria due to a lack of full engagement of respondents

because the survey did not contain any reverse coded items (Cole et al., 2012). At this point, the remaining 4,526 responses were marked for payment in MTurk®. The final step of the data cleaning process consisted of the removal of responses that did not meet the sample requirements, such as 55 years or older ( $n = 239$ ), an industry sector other than service industry ( $n = 657$ ), or a manager ( $n = 1,546$ ). The final sample size for Survey 1 was 2,084 after the completion of the data cleaning process. The cleaned data file was saved for subsequent analysis.

**Survey 2.** For Survey 2, a total of 1,808 responses were collected from the 2,084 respondents who successfully completed Survey 1. After the respondents' IP addresses were removed to ensure the anonymity of the survey participants, 102 responses were removed that failed the bot check. Responses that passed the bot check, but the participants did not agree to the informed consent ( $n = 9$ ) were removed as well. All questions in the survey were required to be answered, therefore no missing data should have remained at this point unless the respondents exited the survey without completing the survey. A total of 58 incomplete responses were removed. Again, responses that did not pass the IMC were retained. At this point, the remaining 1,639 responses were marked for payment in MTurk®. Additional data that was removed based on indicators of respondents' lack of full engagement were responses that were completed in less than 2 minutes ( $n = 17$ ). The reasonable completion range was based on the average survey completion time of 6 minutes and 56 seconds ( $SD = 4$  minutes and 21 seconds). Both, the affective commitment and the social desirability response bias scales have reverse coded items. Straight-lining exists when respondent select the same response option for all items of either the affective commitment or the social desirability response bias scale

(Cole et al., 2012). A total of 21 responses were removed due to straight-lining of the affective commitment instrument or the social desirability response bias instrument that indicated lack of full engagement of the respondents (Cole et al., 2012). At this point, reverse coding of negatively worded items was conducted to allow for the interpretation of the relationship between the variables. The affective commitment instrument was anchored on a 7-point Likert-type scale with 1 indicating *strongly disagree* and 7 indicating *strongly agree*. Items 3, 4, and 6 were negatively worded and recoded, so all the scale scores indicated an increase in affective commitment as the score increases. The same process was conducted for the social desirability response bias instrument, which was anchored on a 5-point Likert-type scale, with 1 indicating *strongly disagree* and 5 indicating *strongly agree*. Items 1, 4, 6, 7 and 8 were negatively worded and recoded, so all scale scores indicated an increase in social desirability response bias as the score increases. After the completion of the data cleaning process, the sample size was 1,601. To allow for the determination of the dominant culture, scale scores for the culture groups were created. After the identification of the dominant culture, 372 responses possessed no dominant culture, 55 responses indicated an adhocracy culture, and 358 indicated a market culture. For the two cultures of interest, 388 responses indicated a clan culture and 428 indicated hierarchy culture. Responses with no dominant culture were removed, which left the final sample size at 1,229. The cleaned data file was saved for subsequent analysis.

**Survey 3.** For Survey 3, a total of 1,074 responses were collected from the 1,229 respondents who successfully completed Survey 2. After the respondents' IP addresses were removed to ensure the anonymity of the survey participants, 36 responses were

removed that failed the bot check. Responses that passed the bot check, but the participants did not agree to the informed consent ( $n = 1$ ) were removed as well. All questions in the survey were required to be answered, therefore no missing data should have remained at this point unless the respondents exited the survey without completing the survey. A total of 59 incomplete responses were removed. At this point, the remaining 978 responses were marked for payment in MTurk®. Additional data were removed based on indicators of the respondents' lack of full engagement in that the responses that completed in less than 20 seconds ( $n = 9$ ). The reasonable completion range was based on the average survey completion time of 1 minute and 11 seconds ( $SD = 50$  seconds). Straight-lining was not considered as data removal criteria due to the lack of full engagement of the respondents because the survey did not contain any reverse coded items (Cole et al., 2012). The final sample size was 969 after the completion of the data cleaning process. The cleaned data file was saved for subsequent analysis.

**Combined Surveys.** After the data cleaning of the three surveys, the data of the 969 respondents were matched across the three waves via the MTurk® WorkerID. The combined data were reviewed for responses that did not pass the IMCs. One response missed more than one of the three IMCs. In addition, close assessment of the responses with failed IMCs did not show any other signs of lacking full engagement, so all other responses with missed IMCs were retained. In addition, responses that indicated an adhocracy culture ( $n = 40$ ) or a market culture ( $n = 275$ ) were eliminated. The final sample of 653 valid responses were comprised of 309 responses with a clan culture, and 344 responses with a hierarchy culture. Table 8 provides the frequency distribution of demographics and work characteristics of the total sample ( $n = 653$ ) as well as the clan

culture ( $n = 309$ ) and the hierarchy culture ( $n = 344$ ) sample. Table 8 also presents the chi-square test results for the clan culture and hierarchy culture groups of the initial pooled sample.

Table 8

*Demographic and Group Comparison Chi-Square Results of the Initial Pooled Sample*

Characteristic	Total Sample		Clan Culture		Hierarchy Culture		$\chi^2$	df	p-value	Cramer's V
	n	%	n	%	n	%				
Gender							6.214	1	.013	.098
Male	259	39.7	107	34.6	152	44.2				
Female	394	60.3	202	65.4	192	55.8				
Age							2.670	1	.102	.064
18-24	65	10.0	37	12.0	28	8.1				
25-54	588	90.0	272	88.0	316	91.8				
Race/Ethnicity							3.503	1	.061	.073
Caucasian or White (not Hispanic)	514	78.7	253	81.9	261	75.9				
Other	139	21.3	56	18.1	83	24.1				
Highest Level of Education							2.128	1	.145	.057
2-year degree or less	214	32.8	110	35.6	104	30.2				
4-year degree or higher	439	67.2	199	64.4	240	69.8				
Company Size							25.665	1	< .001	.198
1-499 employees	329	50.4	188	60.8	141	41.0				
500 or more employees	324	49.6	121	39.2	203	59.0				
Company Age							1.239	1	.266	.044
0-9 years	85	13.0	45	14.6	40	11.6				
10 years and older	568	87.0	264	85.4	304	88.4				
Tenure							.168	1	.682	.016
0-4 years	394	60.3	189	61.2	205	59.6				
5 years or more	259	39.7	120	38.8	139	40.4				

*Note.* Total sample  $n = 653$ . Clan culture  $n = 309$ . Hierarchy culture  $n = 344$ . df = degrees of freedom.

## **Group Comparison Results**

The purpose of the group comparison was to determine group similarities and differences between full-time U.S. employees working at an organization with different organizational cultures, as this is a required component when testing for structural invariance (Vandenberg & Lance, 2000). Testing for structural invariance requires equivalent groups (Vandenberg & Lance, 2000). Equivalent organizational culture groups, which solely differ based on organizational culture, ensure that all demographics equally affect both assessed groups.

For the group comparison, statistical significance was determined at  $p \leq .05$  and practical significance was determined at a Cramer's  $V \geq .10$  (Huck, 2012). A series of Pearson's chi-square tests were conducted on the demographic variables of gender, age, race/ethnicity, educational level, company size, company age, and tenure with the company with organizational culture (i.e., clan culture and the hierarchy culture) as the grouping variable (see Table 8). Overall, the  $p$ -values ranged from  $\leq .001$  to  $.682$  and the Cramer's  $V$  values ranged from  $.016$  to  $.198$  (see Table 8). The chi-square test results for the clan culture and hierarchy culture groups of the initial pooled sample indicated statistically and practically significant result between the two groups for gender ( $p = .013$ , Cramer's  $V = .098$ ) and company size ( $p \leq .001$ , Cramer's  $V = .198$ ). Due to the statistically and practically significant result of the chi-square test results, propensity score matching was utilized (Rubin, 1997).

The R<sup>®</sup> package MatchIt (Ho, Kosuke, King, & Stuart, 2018) was used to conduct propensity score matching, which utilizes covariates to match and equate responses between groups. Two propensity score matching methods, nearest neighbor and genetic

matching, were utilized. First, nearest neighbor matching was conducted as it has been recommended as the most straightforward propensity score matching method (Caliendo & Kopeinig, 2008). The caliper was set to .20 as recommended by Stuart (2010). The caliper setting is the maximum allowable difference between matched responses and is an a priori selection that is determined by the researcher (Lane & Gibbs, 2014). Nearest neighbor matching required the input of all demographic variables (i.e., gender, age, race/ethnicity, educational level, company size, company age, and tenure), which resulted in matched groups ( $n_{clan} = 255$ ;  $n_{hierarchy} = 255$ ) that were neither statistically nor practically significant. The chi-square test results for the clan culture and hierarchy culture groups after the nearest neighbor propensity score matching is reported in Table 9. Comparing Table 9 to Table 8 shows that the statistically and practically significant chi-square test results between the two groups for gender and company size were resolved. However, the process resulted in a high number of lost responses ( $n = 143$ ). Therefore, genetic matching was conducted as an alternative propensity score matching approach.

Table 9

*Group Comparison Chi-Square Results after Nearest Neighbor Propensity Score Matching*

Characteristic	$\chi^2$	df	p-value	Cramer's V
Gender	.294	1	.588	.024
Age	.355	1	.551	.026
Race/Ethnicity	.012	1	.914	.005
Highest Level of Education	1.036	1	.309	.045
Company Size	0	1	1.000	0
Company Age	3.813	1	.051	.086
Tenure	.842	1	1.000	.041

*Note.* df = degrees of freedom. Total sample  $n = 510$ . Clan culture  $n = 255$ . Hierarchy culture  $n = 255$ .

Genetic matching has been recommended when the propensity score matching output is required to have highly equivalent groups (Randolph, Falbe, Manuel, & Balloun, 2014). Genetic matching required the input of all the demographic variables that had statistically and practically significant chi-square test results between the two groups before propensity score matching was conducted (i.e., gender and company size). The caliper was set to .20, which resulted in matched groups ( $n_{clan} = 262$ ;  $n_{hierarchy} = 262$ ) that were neither statistically nor practically significant as reported in Table 10. Therefore, the two groups were considered equivalent to proceed with the data analysis process. Table 11 provides the frequency distribution of demographics and work characteristics of the total sample ( $n = 524$ ) as well as the clan culture ( $n = 262$ ) and the hierarchy culture ( $n = 262$ ) sample after genetic matching.

Table 10

*Group Comparison Chi-Square Results after Genetic Matching Propensity Score Matching*

Characteristic	$\chi^2$	df	p-value	Cramer's V
Gender	0	1	1.000	0
Age	1.029	1	.311	.044
Race/Ethnicity	3.632	1	.057	.083
Highest Level of Education	1.246	1	.264	.049
Company Size	0	1	1.000	0
Company Age	.839	1	.360	.040
Tenure	.127	1	.721	.016

*Note.* df = degrees of freedom. Total sample  $n = 524$ . Clan culture  $n = 262$ . Hierarchy culture  $n = 262$ .

Table 11

*Demographic and Work Characteristics after Genetic Matching Propensity Score Matching*

Characteristic	Total Sample		Clan Culture		Hierarchy Culture	
	n	%	n	%	n	%
Gender						
Male	196	37.4	98	37.4	98	37.4
Female	328	62.6	164	62.6	164	62.6
Age						
18-24	53	10.1	30	11.5	23	8.8
25-54	471	89.9	232	88.5	239	91.2
Race/Ethnicity						
Caucasian or White (not Hispanic)	410	78.2	214	81.7	196	74.8
Other	114	21.8	48	18.3	66	25.2
Highest Level of Education						
2-year degree or less	172	32.8	92	35.1	80	30.5
4-year degree or higher	352	67.2	170	64.9	182	69.5
Company Size						
1-499 employees	282	53.8	141	53.8	141	53.8
500 or more employees	242	46.2	121	46.2	121	46.2
Company Age						
0-9 years	67	12.8	30	11.5	37	14.1
10 years and older	457	87.2	232	88.5	225	85.9
Tenure						
0-4 years	314	59.9	159	60.7	155	59.2
5 years or more	210	40.1	103	39.3	107	40.8

Note. Total sample n = 524. Clan culture n = 262. Hierarchy culture n = 262.

### Sample Representativeness Results

Sample representativeness was assessed based on Pearson's chi-square tests by comparing the demographic percentages of the collected pooled sample to the population percentages obtained from the BLS and the USCB. Statistical significance was determined at  $p \leq .05$  and practical significance was determined at  $w \geq .10$  (Cohen, 1988; Huck, 2012). An effect is considered small for  $w = .10$ , medium for  $w = .30$ , and large at  $w = .50$  (Cohen, 1988; Huck, 2012). Table 12 provides a comparison between the pooled

sample and the population for the initial sample ( $n = 653$ ) as well as for the genetically matched sample ( $n = 524$ ).

Notable differences were observed between the BLS/USCB demographic profile and the final sample. The final sample consisted of more females (62.6%) than the BLS/USCB demographic profile (53.1%). MTurk<sup>®</sup> workers have been reported to be dominantly female (Buhrmester et al., 2011; Paolacci et al., 2010). The age distribution between the final sample and the BLS/USCB demographic profile were similar.

The race distribution also indicated differences between the BLS/USCB demographic profile and the final sample. Compared to the BLS/USCB demographic profile (66.5% Caucasian/White, 16.4% Hispanic), the final sample consisted of more Caucasian/White (78.2%) and fewer Hispanics (5.1%). Further differences were observed in the distribution of highest levels of education. In accordance with the literature on MTurk<sup>®</sup> workers, the demographics of the final sample indicated a higher level of educated participants compared to the BLS/USCB demographic profile (Paolacci et al., 2010).

The demographics of the final sample indicated a smaller percentage of companies with 500 or more employees (46.2%) compared to the BLS/USCB demographic profile (52.2%). However, the demographics of the initial sample indicated the differences in the final sample were caused by the propensity score matching process.

Table 12

*Sample Representativeness Comparison for BLS/USCB against and the Initial Pooled Sample and the Final Sample*

Variable	BLS/ USCB	Initial Sample	$\chi^2$	df	p- value	w	Final Sample	$\chi^2$	df	p- value	w
Gender			13.73	1	<.01	.15		18.97	1	<.01	.19
Male	46.9%	39.7%					37.4%				
Female	53.1%	60.3%					62.6%				
Age			.49	1	.49	.03		.26	1	.61	.02
18-24	10.8%	10.0%					10.1%				
25-54	89.2%	90.0%					89.9%				
Race/Ethnicity			69.46	3	<.01	.33		53.49	3	<.01	.32
African American or Black	11.2%	8.6%					9.4%				
American Indian/Other Native	n/a	0.3%					0.2%				
American											
Asian or Pacific Islander	5.9%	6.3%					6.3%				
Caucasian or White (not Hispanic)	66.5%	78.7%					78.2%				
Hispanic	16.4%	5.2%					5.1%				
Other	n/a	0.9%					0.8%				
Highest Level of Education			202.0	6	<.01	.56		159.39	6	<.01	.55
Less than high school	5.9%	0%					0%				
High school graduate	22.7%	8.3%					9.2%				
Some college	16.5%	16.5%					16.8%				
2-year degree	11.4%	8.0%					6.9%				
4-year degree	26.3%	43.3%					43.5%				
Master's or Professional degree	14.6%	22.2%					21.9%				
Doctorate	2.6%	1.7%					1.7%				
Company Size			1.75	1	.19	.05		7.60	1	<.01	.12
1-499 employees	47.8%	50.4%					53.8%				
500 or more employees	52.2%	49.6%					46.2%				

Note: BLS = Bureau of Labor Statistics. USCB = U.S. Census Bureau. Initial Sample % = initial collected sample ( $n = 653$ ). Final Sample % = final sample after genetic matching ( $n = 524$ ). df = degrees of freedom.

## **Statistical Assumptions Results**

The statistical data analysis and SEM was conducted using IBM® SPSS® AMOS 25.0.0. software packages. The cleaned data file after the completion of the propensity score matching process was converted into an SPSS.sav format. The converted file was then opened in AMOS.

Maximum likelihood was used as the estimation technique based on a covariance matrix, which assumes multivariate normality (Kline, 2016). The covariance data matrix of the raw data was positive definite. The presence of multivariate outliers was assessed via the squared Mahalanobis distance ( $D^2$ ; Huck, 2012; Kline, 2016).  $D^2$  values that are distinctly different from the other  $D^2$  values are potential outliers (Byrne, 2010). Special attention was given to high  $D^2$  values with low  $p$ -values ( $p < .001$ ), which is another indicator of a potential outlier (Kline, 2016). All  $D^2$  values with  $p < .001$  were closely examined. One  $D^2$  value appeared to be distinctly different from the other  $D^2$  values. Observation 249 exhibited a large drop in  $D^2$  compared to the preceding observation. After reviewing the raw data scores of observation 249, it was determined that the responses represented outliers. Observation 249 was removed from the dataset due to high variations in reported scores within the UPB, affective commitment, and social desirability response bias instruments. The assumption testing for multivariate normality was continued with the updated dataset.

Multivariate normality was assessed by computing Mardia's statistic (Kankainen et al., 2004). A significant result of the Mardia statistic indicates a departure of multivariate normality (Kankainen et al., 2004). Multivariate normality was not met for the raw data with a Mardia statistic of 66.754 and a critical ratio of 21.607 ( $p < .05$ ). A

critical ratio higher than 5.0 indicates nonnormality (Byrne, 2010). Therefore, a 2,000-case bootstrapping procedure at the 95% confidence level was performed (Kline, 2016). The results indicated that non-bootstrapped estimates were not substantively different compared to bootstrapped estimates. Consequently, data were considered to be multivariate normal with no outliers and non-bootstrapped estimates were reported (Kline, 2016) with the exception of confidence intervals that are reported for the direct effects in the structural model.

### **Measurement Model Analyses**

Before testing for measurement and structural invariance, a measurement model analysis was conducted (Byrne, 2010; Kline, 2016; Schumacker & Lomax, 2016; Thompson, 2003). The IBM® SPSS® AMOS 25.0.0. software packages were used to conduct the analyses. Several CFAs were performed on the overall pooled sample (i.e., clan culture and hierarchy samples combined) and repeated for the clan culture and hierarchy culture sub-samples (Antonakis et al., 2003; Teo et al., 2009). The goodness of fit for the measurement model was determined based on  $\chi^2$ ,  $df$ , RMSEA, SRMRs, TLI, CFI, AIC, ACR, and factor loadings. In addition, structure coefficients were assessed to determine whether the manifest variable correlated most highly with its corresponding factor, as indicated by the structure coefficients (Graham et al., 2003). Further statistics that were evaluated were CR, AVE, and the square root of the AVE. Due to the relatively small sample size of the clan culture ( $n = 262$ ) and hierarchy culture ( $n = 261$ ) sub-samples, recommendations to focus on the SRMR and CFI were followed (Hu & Bentler, 1998). The model fit indices RMSEA and TLI are not recommended for small sample sizes (Hu & Bentler, 1998).

Ten measurement models were evaluated with the results for the pooled sample ( $n = 523$ ) reported in Table 13. Tables 14 and 15 indicate the measurement model results for the clan culture ( $n = 262$ ) and hierarchy culture ( $n = 261$ ) sub-samples respectively. The outlier removed during the assessment of statistical assumptions belonged to the hierarchy clan sample, making the sample size one smaller than the clan culture sample. The results of the sub-samples were reported again in Table 16 as multi-sample data (Antonakis et al., 2003). For the creation of the multi-sample data, the data files for the clan and hierarchy cultures were both loaded into the AMOS model by defining the two culture groups within model parameter settings. Reporting of multi-sample data allowed for the initial assessment of configural invariance (Antonakis et al., 2003; Byrne, 2010; Cheung & Rensvold, 1999).

The first model, Model 1, was the theoretical five-factor CFA model with all items. Model 1 did not provide a good fit for the pooled data (RMSEA = .064, SRMR = .055, TLI = .885, CFI = .899). A lack of adequate fit was also found for the sub-group data for the clan culture (RMSEA = .065, SRMR = .067, TLI = .863, CFI = .879) and the hierarchy culture (RMSEA = .071, SRMR = .067, TLI = .856, CFI = .873). In addition, the results of the multi-sample data indicated that the initial model does not provide adequate fit to meet configural invariance (RMSEA = .048, SRMR = .067, TLI = .859, CFI = .876).

Table 13

*Measurement Model Fit Indices for the Pooled Data*

Model (M)	$\chi^2$	df	RMSEA (90% CI)	SRMR	TLI	CFI	AIC	ACR
M1: 5-factors	759.781	244	.064 (.059-.069)	.055	.885	.899	871.781	22
M2: 6-factors method effect	1,268.537	239	.091 (.086-.096)	.121	.766	.797	1390.537	71
M3: UPB	66.782	9	.111 (.087-.137)	.037	.941	.965	90.782	1
M4: AC	152.853	9	.175 (.151-.200)	.048	.888	.933	176.853	2
M5: AC correlated errors of negatively worded items	20.485	6	.068 (.037-.101)	.022	.983	.993	50.485	0
M6: SD	212.132	35	.098 (.086-.111)	.062	.776	.834	252.132	4
M7: SD correlated errors of negatively worded items	183.472	25	.110 (.096-.125)	.058	.733	.851	243.472	4
M8: SD negatively worded items removed	56.116	5	.140 (.108-.174)	.060	.733	.866	76.116	2
M9: SD positively worded items removed	10.808	5	.047 (.000-.086)	.027	.961	.981	30.808	0
M10: 4-factors, SD removed, AC correlated errors of negatively worded items	159.709	70	.050 (.039-.060)	.042	.969	.976	229.709	4

Note. df = degrees of freedom. RMSEA = root mean square error of approximation. SRMR = standardized root mean square residual. TLI = Tucker-Lewis Index. CFI = comparative fit index. AIC = Akaike information criterion. ACR = absolute correlation residuals.

Table 14

*Measurement Model Fit Indices for the Clan Culture Sub-Samples Data*

Model (M)	$\chi^2$	df	RMSEA (90% CI)	SRMR	TLI	CFI	AIC	ACR
M1: 5-factors	510.332	244	.065 (.057-.073)	.067	.863	.879	622.332	46
M2: 6-factors method effect	731.862	239	.089 (.082-.096)	.116	.741	.776	853.862	76
M3: UPB	43.296	9	.121 (.086-158)	.039	.936	.961	67.296	1
M4: AC	99.880	9	.197 (.163-.232)	.075	.783	.870	123.880	5
M5: AC correlated errors of negatively worded items	24.53	6	.109 (.066-.155)	.046	.934	.973	54.553	2
M6: SD	106.846	35	.089 (.070-.108)	.062	.806	.849	146.846	6
M7: SD correlated errors of negatively worded items	89.934	25	.100 (.078-.122)	.057	.755	.864	149.934	6
M8: SD negatively worded items removed	28.047	5	.133 (.088-.183)	.060	.722	.861	48.047	2
M9: SD positively worded items removed	4.535	5	.000 (.000-.082)	.027	1.007	1.000	24.535	0
M10: 4-factors, SD removed, AC correlated errors of negatively worded items	128.388	70	.057 (.041-.072)	.055	.953	.964	198.388	9

Note. df = degrees of freedom. RMSEA = root mean square error of approximation. SRMR = standardized root mean square residual. TLI = Tucker-Lewis Index. CFI = comparative fit index. AIC = Akaike information criterion. ACR = absolute correlation residuals.

Table 15

*Measurement Model Fit Indices for the Hierarchy Culture Sub-Samples Data*

Model (M)	$\chi^2$	df	RMSEA (90% CI)	SRMR	TLI	CFI	AIC	ACR
M1: 5-factors	563.437	244	.071 (.063-.079)	.067	.856	.873	675.437	50
M2: 6-factors method effect	830.463	239	.098 (.090-.105)	.131	.728	.764	952.463	75
M3: UPB	37.175	9	.110 (.075-.147)	.041	.939	.964	61.175	2
M4: AC	61.687	9	.150 (.116-.187)	.046	.910	.946	85.687	1
M5: AC correlated errors of negatively worded items	5.267	6	.000 (.000-.075)	.014	1.002	1.000	35.267	0
M6: SD	137.582	35	.106 (.088-.125)	.069	.775	.835	177.582	8
M7: SD correlated errors of negatively worded items	124.092	25	.123 (.102-.146)	.066	.696	.831	184/092	5
M8: SD negatively worded items removed	33.765	5	.149 (.104-.198)	.065	.739	.869	53.765	3
M9: SD positively worded items removed	7.338	5	.042 (.000-.103)	.031	.969	.985	27.338	0
M10: 4-factors, SD removed, AC correlated errors of negatively worded items	128.118	70	.057 (.041-.072)	.050	.958	.968	198.118	10

Note. df = degrees of freedom. RMSEA = root mean square error of approximation. SRMR = standardized root mean square residual. TLI = Tucker-Lewis Index. CFI = comparative fit index. AIC = Akaike information criterion. ACR = absolute correlation residuals.

Table 16

*Measurement Model Fit Indices for the Multi-Samples Data*

Model (M)	$\chi^2$	df	RMSEA (90% CI)	SRMR	TLI	CFI	AIC	ACR
M1: 5-factors	1073.770	488	.048 (.044-.052)	.067	.859	.876	1297.770	96
M2: 6-factors method effect	1562.326	478	.066 (.062-.070)	.116	.734	.770	5353.436	151
M3: UPB	80.471	18	.082 (.064-.100)	.039	.937	.962	128.471	3
M4: AC	161.567	18	.124 (.107-.142)	.075	.857	.914	209.567	6
M5: AC correlated errors of negatively worded items	29.819	12	.053 (.030-.078)	.046	.973	.989	89.819	2
M6: SD	244.429	70	.069 (.060-.079)	.062	.789	.836	324.429	14
M7: SD correlated errors of negatively worded items	214.026	50	.079 (.069-.090)	.057	.851	.722	334.026	11
M8: SD negatively worded items removed	61.803	10	.100 (.077-.124)	.060	.732	.866	101.803	5
M9: SD positively worded items removed	11.873	10	.019 (.000-.053)	.027	.987	.987	51.873	0
M10: 4-factors, SD removed, AC correlated errors of negatively worded items	256.506	140	.040 (.032-.048)	.055	.955	.966	396.506	19

Note. df = degrees of freedom. RMSEA = root mean square error of approximation. SRMR = standardized root mean square residual. TLI = Tucker-Lewis Index. CFI = comparative fit index. AIC = Akaike information criterion. ACR = absolute correlation residuals.

Model 2 was a six-factor CFA model with all negatively-worded items set to load on a single factor to test for a method effect of negatively-worded items (DiStefano & Motl, 2006). A decreased fit of Model 2 compared to Model 1 was found for the pooled data ( $\Delta\chi^2 = 508.756, p < .001$ ), the clan culture data ( $\Delta\chi^2 = 221.530, p < .001$ ), and the hierarchy culture data ( $\Delta\chi^2 = 267.026, p < .001$ ). The decreased model fit indicated that no method effect due to the negatively-worded items was present.

Based on the inadequate model fit for Model 1, the recommendation of Cheung and Rensvold (1999) were followed by evaluating separate single-factor measurement models for each construct (Cheung & Rensvold, 1999). Model 3 assessed the measurement model for UPB. Model 3 provided an adequate fit for the pooled data (RMSEA = .111, SRMR = .037, TLI = .941, CFI = .965). An adequate fit was also found for the multi-samples data (RMSEA = .082, SRMR = .039, TLI = .937, CFI = .962).

Models 4 and 5 evaluated affective commitment (AC). The initial model, Model 4, did not provide a good fit for the pooled data (RMSEA = .175, SRMR = .048, TLI = .888, CFI = .933). For the sub-group data, the fit for the hierarchy culture data was adequate (RMSEA = .150, SRMR = .046, TLI = .910, CFI = .946), but not for the clan culture data (RMSEA = .197, SRMR = .075, TLI = .783, CFI = .870). Therefore, suggestions in the literature were followed to correlate the residuals associated with the reverse-coded items within their respective factor (DiStefano & Motl, 2006). In Model 5, the residuals associated with the reverse-coded items were correlated, which resulted in an improved fit for the pooled data ( $\Delta\chi^2 = 132.368, p < .001$ ). An improved fit was also recorded for the clan culture data ( $\Delta\chi^2 = 75.350, p < .001$ ) and the hierarchy culture data

$(\Delta\chi^2 = 56.420, p < .001)$ . In addition, the results of the multi-sample data indicated adequate fit (RMSEA = .053, SRMR = .046, TLI = .973, CFI = .989). Therefore, Model 5 was noted as the best fitting measurement model for affective commitment.

Models 6 through 9 evaluated social desirability response bias (SD). The initial model, Model 6, did not provide a good fit for the pooled data (RMSEA = .098, SRMR = .062, TLI = .776, CFI = .834). A lack of adequate fit was also found for the sub-group data for the clan culture (RMSEA = .089, SRMR = .062, TLI = .806, CFI = .849) and the hierarchy culture (RMSEA = .106, SRMR = .069, TLI = .775, CFI = .835). In addition, the results of the multi-sample data indicated lack of adequate fit (RMSEA = .069, SRMR = .062, TLI = .789, CFI = .836). Therefore, suggestions in the literature were followed to correlate the residuals associated with the reverse-coded items within their respective factor (DiStefano & Motl, 2006). In Model 7, the residuals associated with the reverse-coded items were correlated, which resulted in an improved fit for the pooled data ( $\Delta\chi^2 = 28.660, p = .001$ ). However, correlating the residuals of the reverse-coded items did not result in a significantly improved fit at the sub-group level for the clan culture data ( $\Delta\chi^2 = 16.912, p = .076$ ) and the hierarchy culture data ( $\Delta\chi^2 = 13.490, p = .198$ ). In addition, the results of the multi-sample data did not indicate adequate fit (RMSEA = .079, SRMR = .057, TLI = .851, CFI = .722). Therefore, for Model 8, the decision was made to remove all reverse-coded items for the social desirability response bias scale to reduce the ambiguity (DiStefano & Motl, 2006; Roszkowski & Soven, 2010). Model 8 did not provide a good fit for the pooled data (RMSEA = .140, SRMR = .060, TLI = .733, CFI = .866). A lack of adequate fit was also found for the sub-group data for the clan culture (RMSEA = .133, SRMR = .060, TLI = .722, CFI = .861) and the

hierarchy culture (RMSEA = .149, SRMR = .065, TLI = .739, CFI = .869). In addition, the results of the multi-sample data indicated lack of adequate fit (RMSEA = .100, SRMR = .060, TLI = .732, CFI = .866). Therefore, as last modification option to assess wording effect, all negatively worded items were retained while removing all positively worded items. It needs to be noted that “the better fitting models for scales containing both positively and negatively worded items have generally involved wording effects for the negatively worded items” (DiStefano & Motl, 2006, p. 452). However, the results of Model 9 indicated a wording effect for the positively worded items. Model 9 provided a good fit for the pooled data (RMSEA = .047, SRMR = .027, TLI = .961, CFI = .981) and for the multi-sample data (RMSEA = .019, SRMR = .027, TLI = .987, CFI = .987). However, it needs to be noted that for the clan culture sample a  $\chi^2/df$  ratio of less than 1.00 was reported. The ratio of less than 1.00 indicates that the model fits too well and is therefore not likely to be replicated (Jöreskog, 1967; Schmitt, 1978). The reported fit indices (RMSEA < .001, TLI = 1.007, CFI = 1.000) are a result of the  $\chi^2/df$  ratio of less than 1.00 and indicate a too well-fitting model as well. With this reservation in mind, Model 9 was noted as the best fitting measurement model for social desirability response bias.

The evaluation of separate single-factor measurement models for each construct resulted in adequate measurement and configural models for UPB (Model 3), affective commitment (AC; Model 5), and social desirability response bias (SD; Model 9). Before the individual measurement models for each construct were combined into one multi-factor measurement model, metric measurement invariance was assessed for each construct (Cheung & Rensvold, 1999). The goodness of fit for the measurement

invariance models was determined based on  $\chi^2$ ,  $df$ , RMSEA, SRMRs, TLI, CFI,  $\Delta\chi^2$ ,  $\Delta df$  with the associated  $p$ -value, and  $\Delta CFI$ . Due to the relatively small sample sizes of the clan and hierarchy culture data, recommendations to focus on the SRMR and CFI were followed (Hu & Bentler, 1998). Although both  $\Delta CFI$  and  $\Delta\chi^2$  are commonly used to analyze change between invariance models due to the small sample sizes of the two culture samples, a stronger emphasis was placed on  $\Delta CFI$  results (Cheung & Rensvold, 2002). The  $\Delta\chi^2$  criterion infrequently indicates model fit due to its reliance on sample size (Cheung & Rensvold, 2002). The  $\Delta CFI$  criterion is more robust to small sample sizes (Cheung & Rensvold, 2002). In addition, recommendations for data with equal sample sizes across groups suggest a  $\Delta RMSEA < .015$  and a  $\Delta SRMR < 0.030$  for metric invariance (Putnick & Bornstein, 2016).

The results of the measurement invariance assessment for the individual constructs, as reported in Table 17, indicated metric measurement invariance for UPB ( $\Delta RMSEA = .007$ ,  $\Delta SRMR = .002$ ,  $\Delta CFI = -.003$ ,  $\Delta\chi^2 = 10.703$ ,  $p = .058$ ) and AC ( $\Delta RMSEA = .001$ ,  $\Delta SRMR = .008$ ,  $\Delta CFI = -.003$ ,  $\Delta\chi^2 = 11.311$ ,  $p = .046$ ). However, metric measurement invariance was not supported for SD ( $\Delta RMSEA = .021$ ,  $\Delta SRMR = .017$ ,  $\Delta CFI = -.027$ ,  $\Delta\chi^2 = 13.923$ ,  $p = .017$ ). Based on these findings, SD had to be excluded from the multi-factor measurement model.

Table 17

*Tests of Measurement Invariance for Individual Constructs*

Model (M)	$\chi^2$	df	RMSEA (90% CI)	SRMR	TLI	CFI	AIC	$\Delta\text{CFI}$	$\Delta\chi^2$	$\Delta df$	p
M3: UPB Configural	80.471	18	.082 (.064-.100)	.039	.937	.962	128.471				
M3: UPB Metric	91.174	23	.075 (.060-.092)	.041	.947	.959	129.174	-.003	10.703	5	.058
M5: AC Configural	29.819	12	.053 (.030-.078)	.046	.973	.989	89.819				
M5: AC Metric	41.130	17	.052 (.032-.073)	.054	.975	.986	91.130	-.003	11.311	5	.046
M9: SD Configural	11.873	10	.019 (.000-.053)	.027	.987	.987	51.873				
M9: SD Metric	25.796	14	.040 (.013-.064)	.044	.943	.960	57.796	-.027	13.923	4	.008

Note. df = degrees of freedom. RMSEA = root mean square error of approximation. SRMR = standardized root mean square residual.

TLI = Tucker-Lewis Index. CFI = comparative fit index. AIC = Akaike information criterion.

The final measurement model, Model 10, was a 4-factor model consisting of UPB, AC with correlated errors of negatively worded items, and the control variables gender and tenure. Model 10 provided an adequate fit for the pooled data ( $\text{RMSEA} = .050$ ,  $\text{SRMR} = .042$ ,  $\text{TLI} = .969$ ,  $\text{CFI} = .976$ ). An adequate fit was also found for the subgroup data for the clan culture ( $\text{RMSEA} = .057$ ,  $\text{SRMR} = .055$ ,  $\text{TLI} = .953$ ,  $\text{CFI} = .964$ ) and the hierarchy culture ( $\text{RMSEA} = .057$ ,  $\text{SRMR} = .050$ ,  $\text{TLI} = .958$ ,  $\text{CFI} = .968$ ).

As a further assessment of the measurement model fit of Model 10 for the clan culture sample and the hierarchy culture sample, the factor loadings of all items were evaluated. All items had factor loadings above the minimum threshold of .5 with most even exceeding the more stringent threshold of .7 but less than .95, except for AC3R that had a factor loading of .453 in the clan culture sample (Bagozzi & Yi, 1988; Hair, Black, Babin, & Anderson, 2015; Kline, 2016). For both culture samples, each manifest variable correlated most highly with its corresponding factor, as indicated by the structure coefficients (Graham et al., 2003; see Tables 18 and 19).

Table 18

*Standardized Path (P) and Structure (S) Coefficients for the Clan Culture Sample Measurement Model*

Construct Variables	UPB		AC		Gender		Tenure	
	P	S	P	S	P	S	P	S
<b>UPB</b>								
UPB1	.859	.859		-.075		.146		.005
UPB2	.834	.834		-.073		.142		.005
UPB3	.850	.850		-.074		.145		.005
UPB4	.679	.679		-.059		.116		.004
UPB5	.564	.564		-.049		.096		.003
UPB6	.777	.777		-.068		.132		.004
<b>AC</b>								
AC1		-.056	.641	.641		-.133		.110
AC2		-.054	.620	.620		-.129		.107
AC3R		-.039	.453	.453		-.094		.078
AC4R		-.069	.790	.790		-.164		.136
AC5		-.074	.847	.847		-.176		.146
AC6R		-.056	.645	.645		-.134		.111
Gender		.166		-.202	.975	.975		-.020
Tenure		.005		.168		-.020	.974	.974

*Note.* UPB = Unethical Pro-Organizational Behavior. AC = Affective Commitment.

SD = Social Desirability.

Table 19

*Standardized Path (P) and Structure (S) Coefficients for the Hierarchy Culture Sample Measurement Model*

Construct Variables	UPB		AC		Gender		Tenure	
	P	S	P	S	P	S	P	S
<b>UPB</b>								
UPB1	.760	.760		.123		.055		-.073
UPB2	.768	.768		.125		.055		-.074
UPB3	.875	.875		.142		.063		-.082
UPB4	.614	.614		.100		.044		-.059
UPB5	.604	.604		.098		.043		-.058
UPB6	.816	.816		.132		.059		-.078

*Note.* UPB = Unethical Pro-Organizational Behavior. AC = Affective Commitment.

SD = Social Desirability.

Table 19 Continued

*Standardized Path (P) and Structure (S) Coefficients for the Hierarchy Culture Sample Measurement Model*

Construct Variables	UPB		AC		Gender		Tenure	
	P	S	P	S	P	S	P	S
<b>AC</b>								
AC1	.108	.665	.665		.001		.032	
AC2	.116	.716	.716		.001		.034	
AC3R	.107	.660	.660		.001		.031	
AC4R	.135	.830	.830		.002		.040	
AC5	.143	.884	.884		.002		.042	
AC6R	.124	.765	.765		.002		.036	
Gender	.070		.002	.975	.975		.054	
Tenure	-.094		.046		.054	.976		.976

*Note.* UPB = Unethical Pro-Organizational Behavior. AC = Affective Commitment.

SD = Social Desirability.

As indicated in Tables 20 and 21, correlations between factors were lower than the square root of the AVE for individual factors indicating evidence of discriminant validity for both cultural samples. In addition, evidence of adequate reliability and convergent validity of the constructs UPB, and affective commitment were given. The CR scores for the constructs of the clan culture sample (.831 and .951) and the constructs of the hierarchy culture sample (.881 and .953) were above the recommended .6 threshold demonstrating reliability (Bagozzi & Yi, 1988). All AVE values met the recommended .5 threshold required to demonstrate convergent validity (Bagozzi & Yi, 1988), except for the construct affective commitment (.460) in the clan culture sample. Nevertheless, with all other values meeting the recommended benchmarks, the measurement models were considered sufficient to move forward with the testing of measurement invariance. The fit indices for the multi-samples data (RMSEA = .040, SRMR = .055, TLI = .955, CFI =

.966) as reported in Table 16 already indicated configural invariance. More detail is provided in the following section.

Table 20

*Implied Correlations, Average Variance Extracted (AVE), and Composite Reliability (CR) the Clan Culture Sample Measurement Model*

Variable	1	2	3	4
1. UPB	.768			
2. AC	-.087	.678		
3. Gender	.170	-.208	.975	
4. Tenure	.006	.172	-.020	.974
<i>CR</i>	.894	.831	.951	.949
<i>AVE</i>	.590	.460	.951	.949

*Note.* Square root of AVE along the diagonal. UPB = Unethical Pro-Organizational Behavior. AC = Affective Commitment. SD = Social Desirability.

Table 21

*Implied Correlations, Average Variance Extracted (AVE), and Composite Reliability (CR) the Hierarchy Culture Sample Measurement Model*

Variable	1	2	3	4
1. UPB	.746			
2. AC	.162	.758		
3. Gender	.072	.002	.975	
4. Tenure	-.096	.048	.055	.976
<i>CR</i>	.881	.889	.951	.953
<i>AVE</i>	.557	.574	.951	.953

*Note.* Square root of AVE along the diagonal. UPB = Unethical Pro-Organizational Behavior. AC = Affective Commitment. SD = Social Desirability.

## **Measurement Invariance Results**

Testing for MASI first required the establishment of measurement invariance using confirmatory factor analysis (Kline, 2016; Meredith, 1993; Schumacker & Lomax, 2016; Teo et al., 2009; Putnick & Bornstein, 2016; Vandenberg & Lance, 2000; Van de Schoot et al., 2012) to ensure that the survey measures “identical constructs with the same structure across different groups” (Van de Schoot et al., 2012, p. 486). The four-factor measurement model M10 that was identified as a result of the measurement model analysis was used to assess measurement invariance. As described in Chapter 3, testing for measurement invariance involved the hierarchical ordering of two nested models consisting of configural and metric measurement invariance (Cheung & Lau, 2011; Vandenberg & Lance, 2000). The IBM® SPSS® AMOS 25.0.0. software packages were used to conduct the analyses.

The goodness of fit for the measurement invariance models was determined based on the  $\chi^2$ ,  $df$ , RMSEA, SRMRs, TLI, CFI,  $\Delta\chi^2$ ,  $\Delta df$  with the associated  $p$ -value, and  $\Delta CFI$ . Due to the relatively small sample sizes of the clan and hierarchy culture data, recommendations to focus on the SRMR and CFI were followed (Hu & Bentler, 1998). Although both  $\Delta CFI$  and  $\Delta\chi^2$  are commonly used to analyze change between invariance models, due to the small sample sizes of the two culture samples, a stronger emphasis was placed on  $\Delta CFI$  results (Cheung & Rensvold, 2002). The  $\Delta\chi^2$  criterion infrequently indicates model fit due to its reliance on sample size (Cheung & Rensvold, 2002). The  $\Delta CFI$  criterion is more robust to small sample sizes (Cheung & Rensvold, 2002). In addition, recommendations for data with equal sample sizes across groups suggest a

$\Delta\text{RMSEA} < .015$  and a  $\Delta\text{SRMR} < 0.030$  for metric invariance (Putnick & Bornstein, 2016).

For the configural model (see Figures 10 and 11), the four-factor measurement model M10 with the multi-samples data was applied. As mentioned in the previous section for M10 with the multi-samples data, model fit indices ( $\text{RMSEA} = .040$ ,  $\text{SRMR} = .055$ ,  $\text{TLI} = .955$ ,  $\text{CFI} = .966$ ) indicated configural invariance (see Table 22).

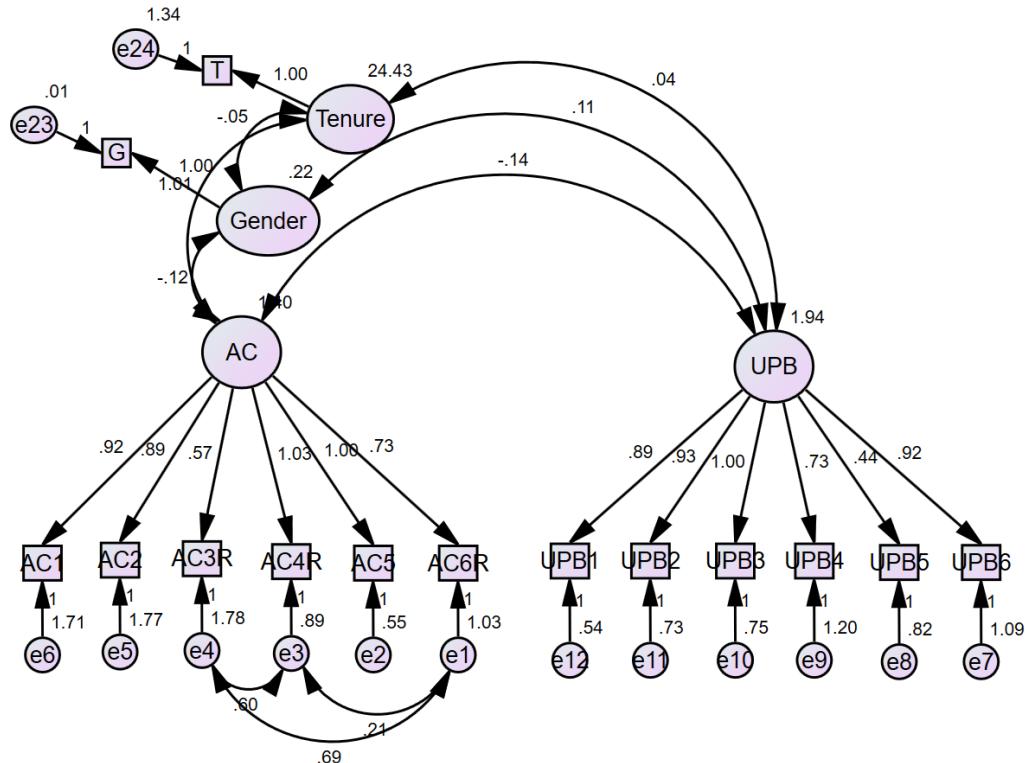
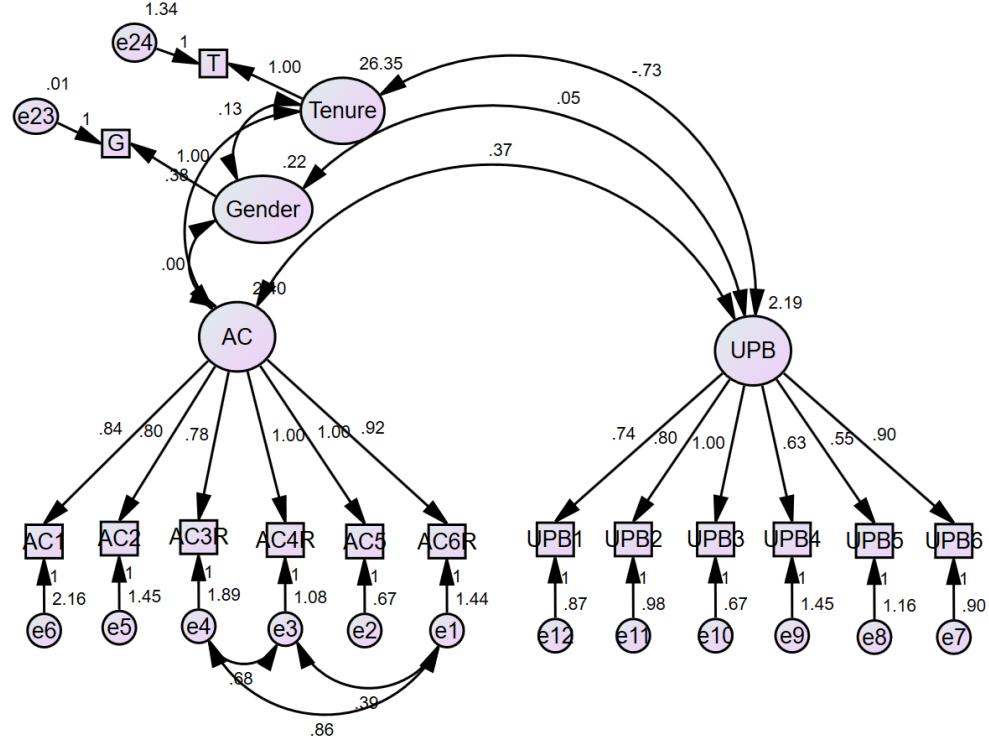


Figure 10. Unstandardized Configural Invariance Output Path Diagram for Clan Culture Sample. AC = Affective Commitment. UPB = Unethical Pro-Organizational Behavior.



**Figure 11.** Unstandardized Configural Invariance Output Path Diagram for Hierarchy Culture Sample. AC = Affective Commitment. UPB = Unethical Pro-Organizational Behavior.

For the assessment of metric invariance (see Figures 12 and 13), the model from the configural invariance step was used and factor loadings were constrained to be equal for like items across the two organizational culture groups. The results of the metric invariance model were compared to the results of the configural invariance model. The metric model fit indices ( $\text{RMSEA} = .040$ ,  $\text{SRMR} = .055$ ,  $\text{TLI} = .954$ ,  $\text{CFI} = .962$ ) indicated adequate fit. Comparing the model fit values between the configural and the metric model, the fit indices reported in Table 24 indicated metric invariance ( $\Delta\text{RMSEA} < .001$ ,  $\Delta\text{SRMR} < .001$ ,  $\Delta\text{CFI} = -.004$ ,  $\Delta\chi^2 = 21.663$ ,  $p = .017$ ). It needs to be noted that the  $\Delta\chi^2$  was significant, which would indicate metric noninvariance. However, it was

stated earlier that more emphasis was placed on the  $\Delta$ RMSEA,  $\Delta$ SRMR, and  $\Delta$ CFI values (Cheung & Rensvold, 2002; Putnick & Bornstein, 2016). Therefore, metric invariance was assumed, which provided support for Hypothesis 1 and fulfilled the requirement for the commencement of the structural invariance assessment.

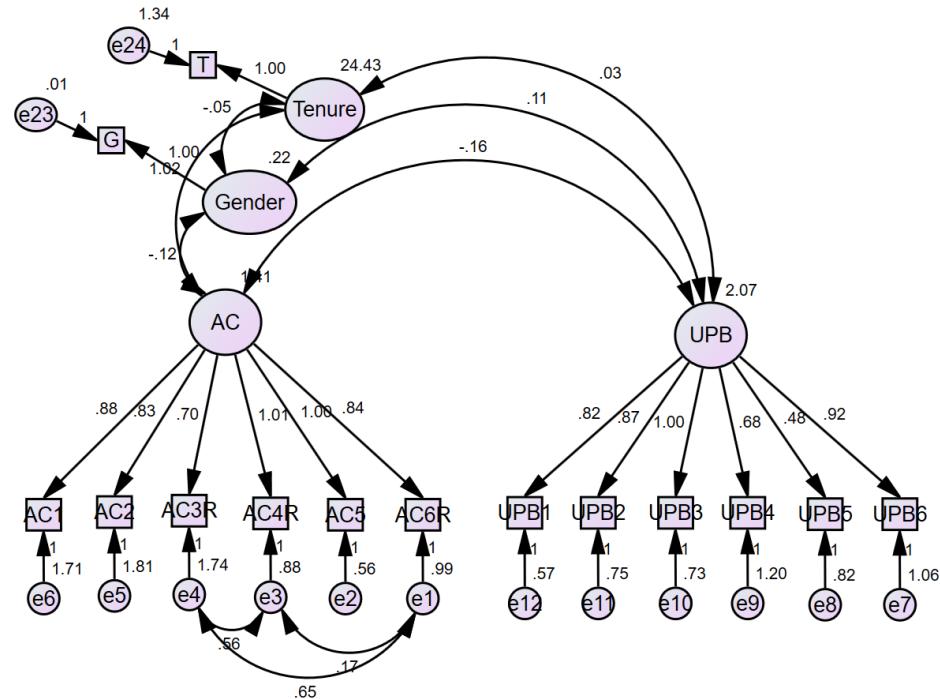


Figure 12. Unstandardized Metric Invariance Output Path Diagram for Clan Culture Sample. AC = Affective Commitment. UPB = Unethical Pro-Organizational Behavior.

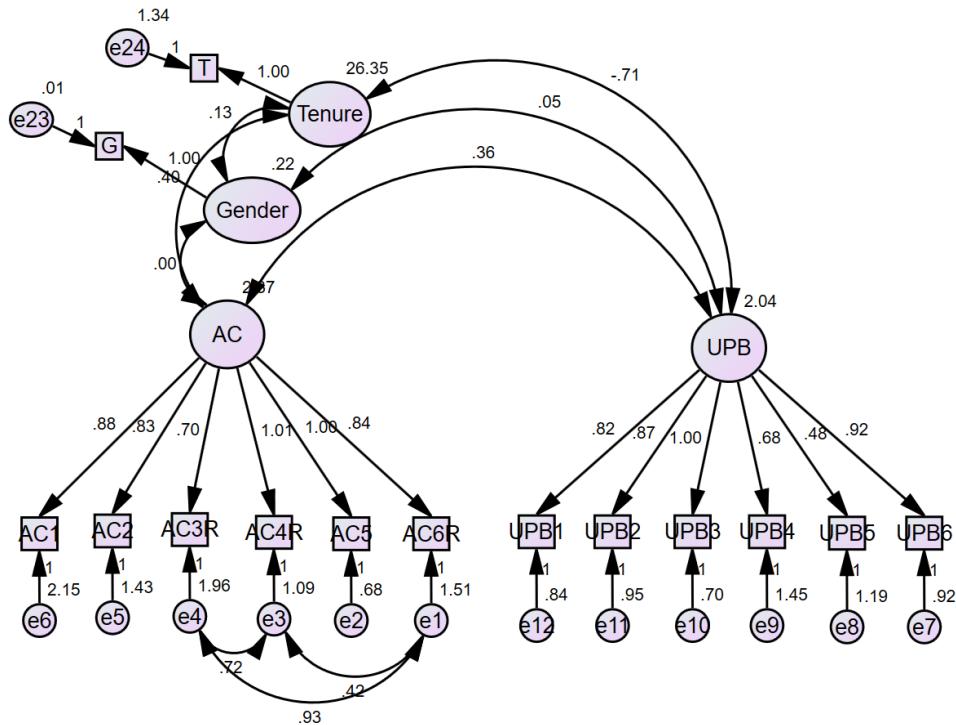


Figure 13. Unstandardized Metric Invariance Output Path Diagram for Hierarchy Culture

Sample. AC = Affective Commitment. UPB = Unethical Pro-Organizational Behavior.

Table 22

*Tests of Measurement Invariance*

Model	$\chi^2$	df	RMSEA (90% CI)	SRMR	TLI	CFI	AIC	ΔCFI	$\Delta\chi^2$	$\Delta df$	p
M10: Configural	256.506	140	.040 (.032-.048)	.055	.955	.966	396.506				
M10: Metric	278.169	150	.040 (.033-.048)	.055	.954	.962	398.169	-.004	21.663	10	.017

Note. df = degrees of freedom. RMSEA = root mean square error of approximation. SRMR = standardized root mean square residual. TLI = Tucker-Lewis Index. CFI = comparative fit index. AIC = Akaike information criterion.

## **Structural Invariance Results**

With the successful establishment of measurement invariance, MASI was conducted to assess whether causal relationships work in the same way across groups (Cheung & Lau, 2011; Deng et al., 2005; Kline, 2016; Schumacker & Lomax, 2016; Teo et al., 2009; Vandenberg & Lance, 2000). Again, due to the small sample sizes of the two culture samples, a stronger emphasis was placed on  $\Delta\text{CFI}$  results as  $\Delta\text{CFI}$  is more robust to small sample sizes compared to the  $\Delta\chi^2$  criterion (Cheung & Rensvold, 2002).

First, the unconstrained baseline model was established by using the metric invariance model and replacing the correlations between the predictors (i.e., affective commitment, gender, and tenure) and the criterion variable UPB with structural paths (Cheung & Lau, 2011; Deng et al., 2005; Hirschfeld & Brown, 2009; Teo et al., 2009; Vandenberg & Lance, 2000). The model fit indices reported in Table 23 for the structural baseline model ( $\text{RMSEA} = .040$ ,  $\text{SRMR} = .055$ ,  $\text{TLI} = .954$ ,  $\text{CFI} = .962$ ) indicated good model fit. Figure 14 and Figure 15 present the unstandardized baseline output path diagrams for the two cultural groups.

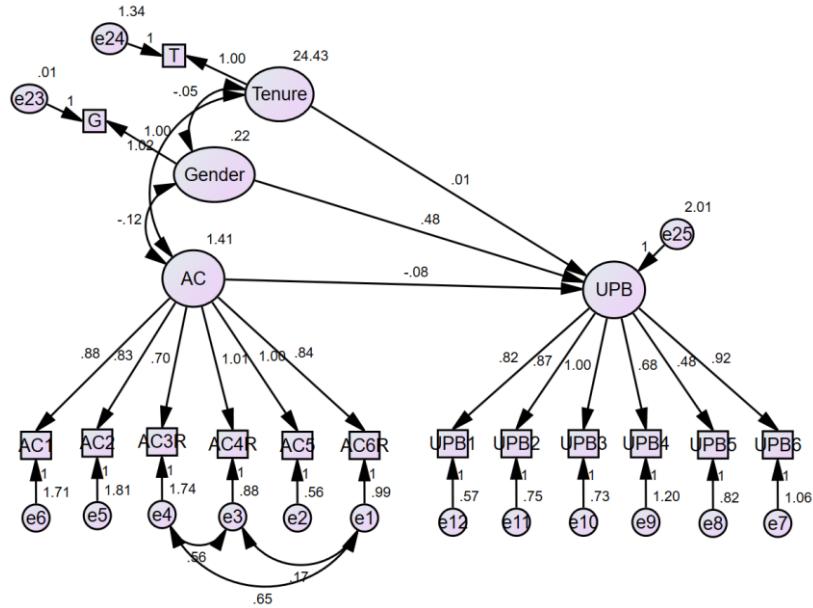


Figure 14. Unstandardized Baseline Output Path Diagram for Clan Culture Sample. AC

= Affective Commitment. UPB = Unethical Pro-Organizational Behavior.

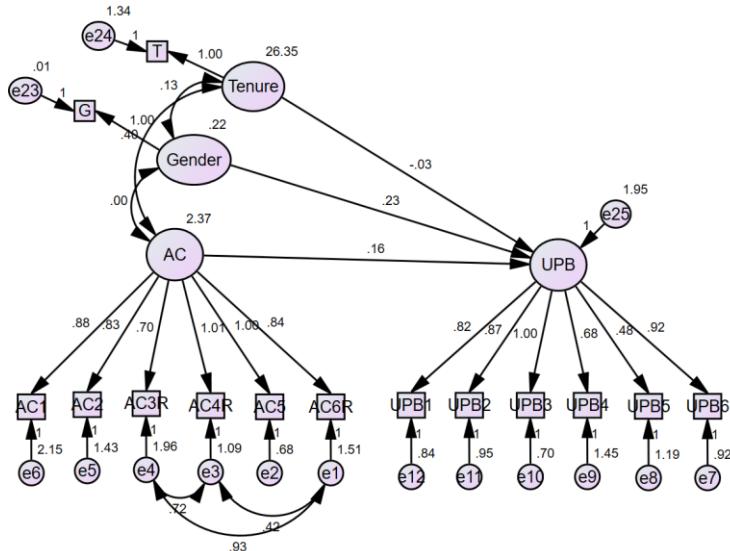


Figure 15. Unstandardized Baseline Output Path Diagram for Hierarchy Culture Sample.

AC = Affective Commitment. UPB = Unethical Pro-Organizational Behavior.

Table 23

*Tests of Structural Invariance*

Model	$\chi^2$	<i>df</i>	RMSEA (90% CI)	SRMR	TLI	CFI	AIC	$\Delta\text{CFI}$	$\Delta\chi^2$	$\Delta df$	<i>p</i>
M10: Baseline	278.169	150	.040 (.033-.048)	.055	.954	.962	398.169				
M10: Gender and Tenure Constrained	280.823	152	.040 (.033-.048)	.057	.955	.962	396.823	.000	2.654	2	.265
M10: Gender, Tenure, and AC Constrained	285.337	153	.041 (.033-.048)	.075	.954	.961	399.337	-.001	4.514	1	.034

Note. *df* = degrees of freedom. RMSEA = root mean square error of approximation. SRMR = standardized root mean square residual. TLI = Tucker-Lewis Index. CFI = comparative fit index. AIC = Akaike information criterion.

Structural noninvariance was expected to be found when testing the structural invariance of affective organizational commitment across the different cultural types with a positive path coefficient between affective commitment and UPB for the hierarchy culture and a negative path coefficient for the clan culture. The assumption was based on contradictory research findings on UPB (Matherne & Litchfield, 2012; Schutts & Shelley, 2014) and the support in the literature that different types of organizational culture can either encourage or discourage ethical behavior (Di Stefano et al., 2017; Pilch & Turska, 2014). Therefore, the unconstrained structural baseline model was first compared to a partially constrained structural model.

The partially constrained structural model was established by using the structural baseline model and by setting the structural weights equal across the groups for tenure and gender (Kline, 2016; McBride-Chang & Manis, 1996; Teo et al., 2009). Figure 16 and Figure 17 present the unstandardized constrained output path diagrams for the two cultural groups. The model fit indices for the partially constrained structural model ( $\text{RMSEA} = .040$ ,  $\text{SRMR} = .057$ ,  $\text{TLI} = .955$ ,  $\text{CFI} = .962$ ) showed adequate fit (see Table 23). Comparing the model fit values between the baseline and the partially constrained structural model ( $\Delta\text{CFI} < .001$ ,  $\Delta\chi^2 = 2.654$ ,  $p = .265$ ), partial structural invariance was supported.

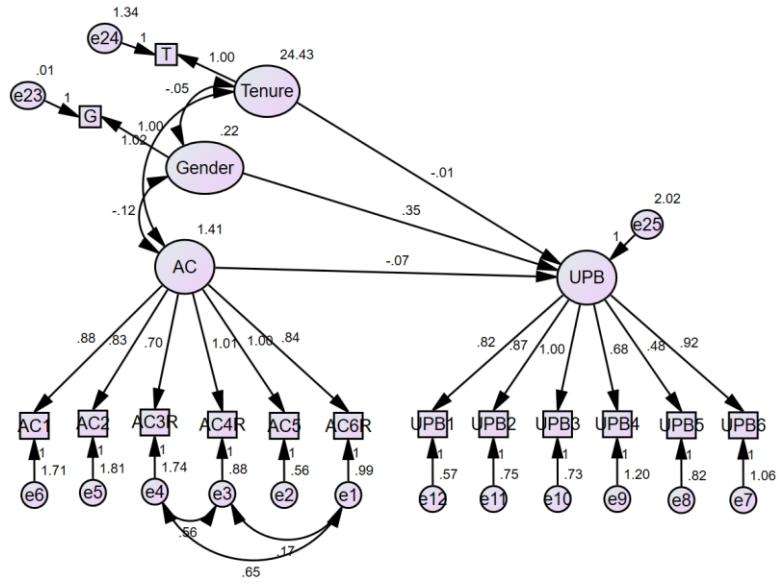


Figure 16. Unstandardized Partially Constrained Output Path Diagram for Clan Culture Sample. AC = Affective Commitment. UPB = Unethical Pro-Organizational Behavior.

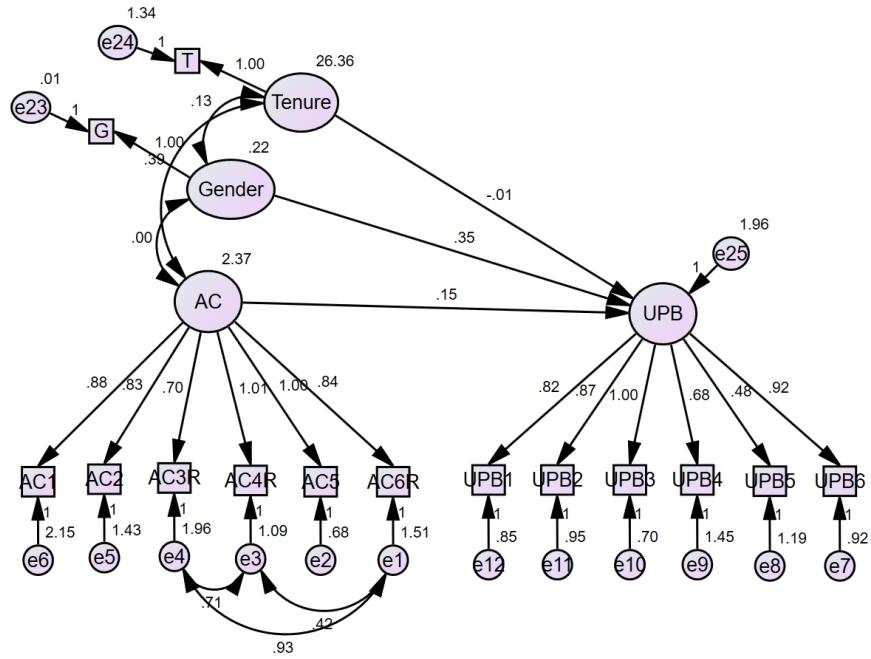
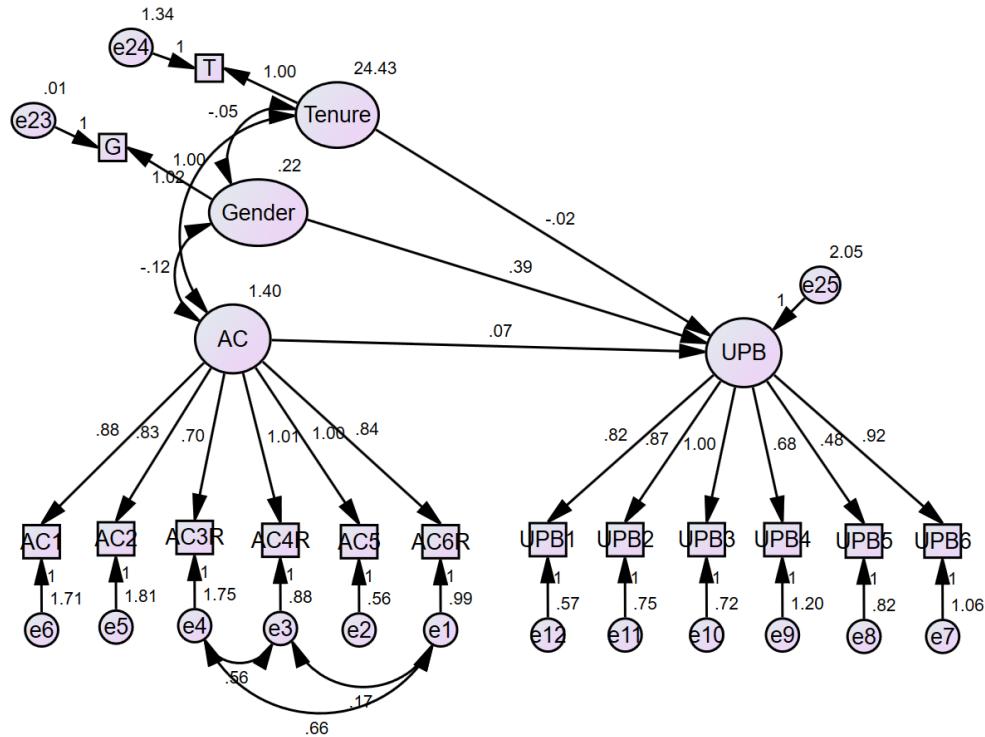
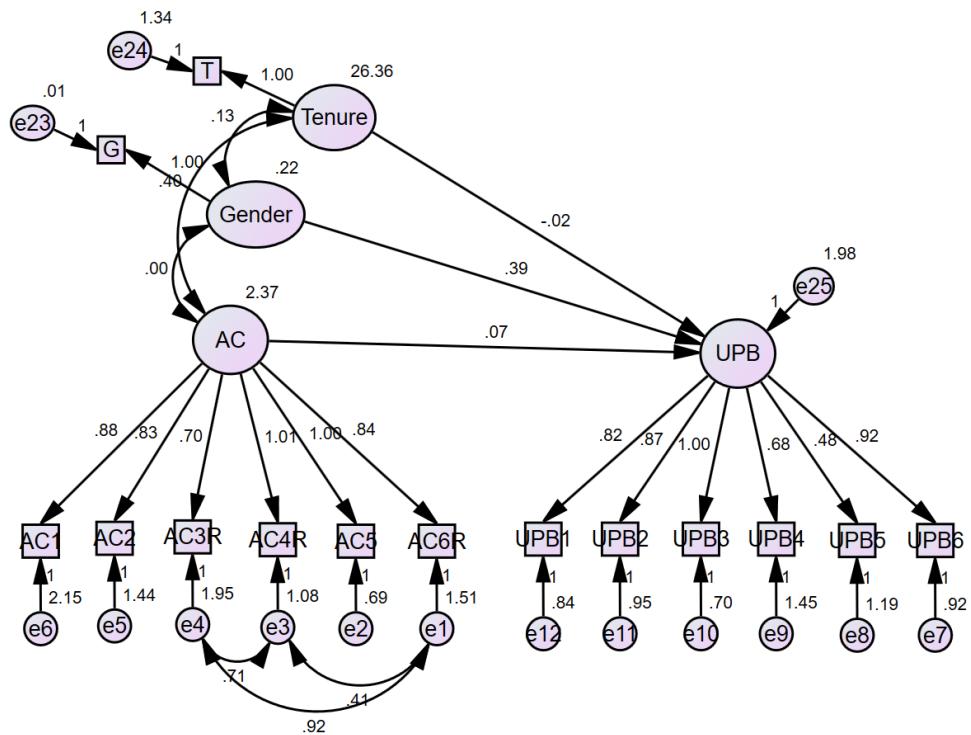


Figure 17. Unstandardized Partially Constrained Output Path Diagram for Hierarchy Culture Sample. AC = Affective Commitment. UPB = Unethical Pro-Organizational Behavior.

Next, the partially constrained structural model was compared to a fully constrained structural model (see Figure 8; Deng et al., 2005; Hirschfeld & Brown, 2009; McBride-Chang & Manis, 1996; Teo et al., 2009). Figure 18 and Figure 19 present the unstandardized fully constrained output path diagrams for the two cultural groups. The fully constrained structural model had a significantly reduced fit compared to the partially constrained structural model ( $\Delta\text{CFI} = -.001$ ,  $\Delta\chi^2 = 4.514$ ,  $p = .034$ ), which indicated structural noninvariance. This provided support for Hypothesis 2. Tables 24 and 25 report the bootstrapped confidence intervals of the direct effects for the clan culture and the hierarchy culture samples of the partially constrained model.



*Figure 18.* Unstandardized Fully Constrained Output Path Diagram for Clan Culture Sample. AC = Affective Commitment. UPB = Unethical Pro-Organizational Behavior.



*Figure 19. Unstandardized Fully Constrained Output Path Diagram for Hierarchy Culture Sample. AC = Affective Commitment. UPB = Unethical Pro-Organizational Behavior.*

Table 24

## *Bootstrapped Confidence Intervals of Direct Effects for Clan Culture*

Construct	Estimate	SE	LB	UPB	<i>p</i> -value
AC	-.074	.091	-.039	.016	.315
Gender	.347	.151	.039	.630	.019
Tenure	-.014	.013	-.039	.016	.315

*Note.* SE = Standard Error. LB = lower bound. UB = upper bound. AC= Affective Commitment. Dependent variable UPB.

Table 25

*Bootstrapped Confidence Intervals of Direct Effects for Hierarchy Culture*

Construct	Estimate	SE	LB	UPB	<i>p</i> -value
AC	.153	.069	.019	.293	.023
Gender	.347	.151	.039	.630	.019
Tenure	-.014	.013	-.039	.016	.315

Note. SE = Standard Error. LB = lower bound. UB = upper bound. AC= Affective Commitment. Dependent variable UPB.

**Descriptive Statistics**

The statistical software packages R® 3.5.0 was utilized to calculate descriptive summary measures. Based on the suggestions of Teo et al. (2009), the descriptive statistics were reported for the overall pooled sample (i.e., clan culture and hierarchy samples combined) as well as for the individual sub-samples (i.e., clan culture and hierarchy samples separately). Table 26 displayed the descriptive statistics for the pooled sample ( $n = 523$ ), Table 27 displayed the descriptive statistics for the clan culture sample ( $n = 262$ ), and Table 28 displayed the results for the hierarchy culture sample ( $n = 261$ ).

Table 26

*Descriptive Statistics for the Pooled Sample (n = 523)*

Construct	Min	Max	M	SD	S	K	UPB 1	UPB 2	UPB 3	UPB 4	UPB 5	UPB 6	AC1	AC2	AC3	AC4	AC5	AC6
													R	R	R	R	R	R
<b>UPB</b>																		
UPB1	1	7	2.41	1.44	.98	.02	-	-	-	-	-	-	-	-	-	-	-	-
UPB2	1	7	2.72	1.55	.61	-.69	.69	-	-	-	-	-	-	-	-	-	-	-
UPB3	1	7	3.04	1.67	.39	-1.00	.68	.70	-	-	-	-	-	-	-	-	-	-
UPB4	1	7	2.47	1.51	.97	.06	.53	.50	.55	-	-	-	-	-	-	-	-	-
UPB5	1	7	1.88	1.24	1.77	3.12	.49	.39	.46	.50	-	-	-	-	-	-	-	-
UPB6	1	7	2.90	1.65	.46	-.96	.61	.62	.72	.50	.50	-	-	-	-	-	-	-
<b>AC</b>																		
AC1	1	7	4.51	2.00	-.42	-1.15	.02	-.00	.02	.02	-.04	.03	-	-	-	-	-	-
AC2	1	7	3.78	1.83	.02	-1.24	.09	.07	.07	.07	.02	.11	.55	-	-	-	-	-
AC3R	1	7	4.70	1.85	-.47	-.97	-.06	-.05	-.03	-.07	-.17	-.05	.52	.42	-	-	-	-
AC4R	1	7	4.49	1.89	-.33	-1.14	-.02	-.02	.03	-.01	-.09	.03	.62	.59	.75	-	-	-
AC5	1	7	4.52	1.74	-.43	-.82	.06	.01	.03	.02	-.02	.03	.62	.65	.60	.77	-	-
AC6R	1	7	4.83	1.81	-.60	-.81	-.02	-.01	.01	-.01	-.12	.02	.60	.53	.77	.75	.70	-
<b>SD</b>																		
IM1R	1	5	3.34	1.16	-.03	-1.28	-.43	-.39	-.39	-.37	-.28	-.34	.07	.06	.13	.11	.08	.10
IM2	1	5	3.05	1.14	.16	-1.09	-.17	-.17	-.18	-.21	-.12	-.17	.02	.06	.01	.02	.04	.02
IM3	1	5	3.70	1.05	-.61	-.47	-.20	-.17	-.15	-.13	-.20	-.14	.10	.07	.14	.11	.09	.13
IM4R	1	5	2.62	1.09	.81	-.41	-.12	-.13	-.19	-.13	-.10	-.12	.04	.13	.02	.06	.05	.06
IM5	1	5	2.88	1.11	.13	-.95	-.09	-.10	-.13	-.14	-.03	-.06	-.03	.06	.00	-.02	.05	-.02
IM6R	1	5	3.51	1.25	-.45	-1.03	-.20	-.19	-.17	-.23	-.23	-.13	.04	.13	.12	.15	.14	.13
IM7R	1	5	3.54	1.32	-.33	-1.34	-.21	-.14	-.16	-.15	-.14	-.15	.00	.08	.05	.07	.02	.07
IM8R	1	5	2.27	1.11	.98	.27	-.11	-.15	-.20	-.12	-.01	-.15	.04	.09	.09	.06	.05	.11
IM9	1	5	3.88	1.08	-.90	.03	-.23	-.19	-.20	-.19	-.18	-.14	.02	.04	.11	.06	.05	.09
IM10	1	5	2.99	1.11	.24	-.92	-.13	-.09	-.12	-.12	-.06	-.10	.01	.07	.00	.01	.04	-.02
G	0	1	.37	.48	.53	-1.72	.10	.09	.09	.10	.10	.08	.00	.00	-.06	-.08	-.09	-.05
T	0	32	5.12	5.18	1.94	5.12	-.03	-.05	-.01	-.03	-.06	-.07	.12	.06	.04	.06	.06	.01

Note. n = Sample size. M = Mean. SD = Standard Deviation. S = Skewness. K = Kurtosis. UPB = Unethical Pro-Organizational Behavior. AC = Affective Commitment. SD = Social Desirability. G = Gender. T = Tenure.

Table 26 Continued

*Descriptive Statistics for the Pooled Sample (n = 523)*

Construct	IM1 R	IM2	IM3	IM4 R	IM5	IM6 R	IM7 R	IM8 R	IM9	IM10	G	T
<b>UPB</b>												
UPB1	-	-	-	-	-	-	-	-	-	-	-	-
UPB2	-	-	-	-	-	-	-	-	-	-	-	-
UPB3	-	-	-	-	-	-	-	-	-	-	-	-
UPB4	-	-	-	-	-	-	-	-	-	-	-	-
UPB5	-	-	-	-	-	-	-	-	-	-	-	-
UPB6	-	-	-	-	-	-	-	-	-	-	-	-
<b>AC</b>												
AC1	-	-	-	-	-	-	-	-	-	-	-	-
AC2	-	-	-	-	-	-	-	-	-	-	-	-
AC3R	-	-	-	-	-	-	-	-	-	-	-	-
AC4R	-	-	-	-	-	-	-	-	-	-	-	-
AC5	-	-	-	-	-	-	-	-	-	-	-	-
AC6R	-	-	-	-	-	-	-	-	-	-	-	-
<b>SD</b>												
IM1R	-	-	-	-	-	-	-	-	-	-	-	-
IM2	.37	-	-	-	-	-	-	-	-	-	-	-
IM3	.38	.26	-	-	-	-	-	-	-	-	-	-
IM4R	.32	.22	.22	-	-	-	-	-	-	-	-	-
IM5	.26	.20	.21	.26	-	-	-	-	-	-	-	-
IM6R	.27	.17	.22	.21	.22	-	-	-	-	-	-	-
IM7R	.27	.14	.31	.23	.11	.28	-	-	-	-	-	-
IM8R	.34	.19	.22	.34	.17	.20	.32	-	-	-	-	-
IM9	.39	.27	.46	.25	.26	.32	.46	.28	-	-	-	-
IM10	.28	.29	.24	.51	.44	.20	.19	.27	.32	-	-	-
G	-.18	-.03	-.13	.06	.02	-.17	-.08	-.02	-.09	.05	-	-
T	.07	.10	.03	.03	.01	.00	.04	.03	.10	-.01	.02	-

Note. n = Sample size. M = Mean. SD = Standard Deviation. S = Skewness. K = Kurtosis.

UPB = Unethical Pro-Organizational Behavior. AC = Affective Commitment. SD = Social Desirability.

G = Gender. T = Tenure.

Table 27

*Descriptive Statistics for the Clan Culture Sample (n = 262)*

Construct	Min	Max	M	SD	S	K	UPB 1	UPB 2	UPB 3	UPB 4	UPB 5	UPB 6	AC1	AC2	AC3 R	AC4 R	AC5	AC6 R
<b>UPB</b>																		
UPB1	1	7	2.47	1.44	.95	.02	-	-	-	-	-	-	-	-	-	-	-	-
UPB2	1	7	2.74	1.55	.63	-.59	.75	-	-	-	-	-	-	-	-	-	-	-
UPB3	1	7	3.01	1.64	.45	-.84	.72	.71	-	-	-	-	-	-	-	-	-	-
UPB4	1	7	2.42	1.50	1.10	.56	.58	.54	.58	-	-	-	-	-	-	-	-	-
UPB5	1	7	1.75	1.10	1.95	4.49	.51	.46	.39	.50	-	-	-	-	-	-	-	-
UPB6	1	7	2.86	1.66	.49	-.89	.64	.62	.72	.52	.47	-	-	-	-	-	-	-
<b>AC</b>																		
AC1	1	7	5.29	1.70	-.99	.13	-.05	-.07	-.03	-.16	-.13	-.06	-	-	-	-	-	-
AC2	1	7	4.44	1.70	-.39	-.84	.01	-.01	-.02	.04	.00	.03	.46	-	-	-	-	-
AC3R	1	7	5.49	1.50	-1.03	.33	-.15	-.21	-.08	-.18	-.22	-.10	.39	.17	-	-	-	-
AC4R	1	7	5.29	1.54	-.83	-.12	-.06	-.10	-.01	-.13	-.09	.01	.53	.43	.62	-	-	-
AC5	1	7	5.24	1.40	-.84	.54	-.06	-.09	-.06	-.11	-.09	-.07	.50	.55	.38	.68	-	-
AC6R	1	7	5.64	1.33	-1.19	1.09	-.07	-.14	-.04	-.11	-.18	-.08	.49	.33	.64	.61	.54	-
<b>SD</b>																		
IM1R	1	5	3.42	1.15	-.09	-1.27	-.44	-.41	-.36	-.38	-.29	-.35	.11	.10	.25	.17	.11	.19
IM2	1	5	3.08	1.15	.09	-1.13	-.18	-.15	-.19	-.19	-.13	-.18	-.03	.02	.04	.02	.02	.01
IM3	1	5	3.79	.97	-.71	-.11	-.24	-.24	-.21	-.15	-.27	-.21	.05	.03	.21	.10	.06	.15
IM4R	1	5	2.66	1.15	.65	-.68	-.11	-.17	-.24	-.17	-.11	-.14	.00	.07	.04	.03	.07	.09
IM5	1	5	2.85	1.12	.14	-.95	-.17	-.17	-.17	-.17	-.11	-.14	-.05	.03	.04	-.05	.01	-.09
IM6R	1	5	3.62	1.20	-.60	-.77	-.19	-.18	-.11	-.08	-.19	-.09	.09	.08	.23	.20	.17	.24
IM7R	1	5	3.65	1.29	-.45	-1.22	-.21	-.13	-.14	-.09	-.11	-.14	-.01	.05	.07	.04	.06	.07
IM8R	1	5	2.39	1.16	.93	-.03	-.18	-.22	-.25	-.12	.00	-.20	-.06	.06	.04	.01	.05	.08
IM9	1	5	3.95	1.00	-.92	.28	-.24	-.20	-.18	-.14	-.25	-.15	.03	.06	.23	.11	.08	.20
IM10	1	5	3.06	1.11	.14	-.92	-.21	-.15	-.18	-.17	-.12	-.13	-.08	.01	.03	-.08	-.04	-.04
G	0	1	.37	.48	.52	-1.73	.17	.15	.11	.14	.15	.09	-.06	-.09	-.08	-.17	-.20	-.12
T	0	32	4.94	5.09	2.05	5.91	.02	-.01	.04	.02	-.04	-.05	.12	.10	.14	.15	.14	.12

Note. n = Sample size. M = Mean. SD = Standard Deviation. S = Skewness. K = Kurtosis. UPB = Unethical Pro-Organizational Behavior. AC = Affective Commitment. SD = Social Desirability. G = Gender. T = Tenure.

Table 27 Continued

*Descriptive Statistics for the Clan Culture Sample (n = 262)*

Construct	IM1 R	IM2	IM3	IM4 R	IM5	IM6 R	IM7 R	IM8 R	IM9	IM10	G	T
<b>UPB</b>												
UPB1	-	-	-	-	-	-	-	-	-	-	-	-
UPB2	-	-	-	-	-	-	-	-	-	-	-	-
UPB3	-	-	-	-	-	-	-	-	-	-	-	-
UPB4	-	-	-	-	-	-	-	-	-	-	-	-
UPB5	-	-	-	-	-	-	-	-	-	-	-	-
UPB6	-	-	-	-	-	-	-	-	-	-	-	-
<b>AC</b>												
AC1	-	-	-	-	-	-	-	-	-	-	-	-
AC2	-	-	-	-	-	-	-	-	-	-	-	-
AC3R	-	-	-	-	-	-	-	-	-	-	-	-
AC4R	-	-	-	-	-	-	-	-	-	-	-	-
AC5	-	-	-	-	-	-	-	-	-	-	-	-
AC6R	-	-	-	-	-	-	-	-	-	-	-	-
<b>SD</b>												
IM1R	-	-	-	-	-	-	-	-	-	-	-	-
IM2	.30	-	-	-	-	-	-	-	-	-	-	-
IM3	.38	.18	-	-	-	-	-	-	-	-	-	-
IM4R	.28	.13	.16	-	-	-	-	-	-	-	-	-
IM5	.27	.13	.25	.30	-	-	-	-	-	-	-	-
IM6R	.20	.09	.22	.17	.24	-	-	-	-	-	-	-
IM7R	.20	.08	.27	.21	.15	.25	-	-	-	-	-	-
IM8R	.40	.14	.24	.37	.27	.23	.32	-	-	-	-	-
IM9	.32	.20	.40	.27	.19	.25	.41	.33	-	-	-	-
IM10	.27	.22	.24	.49	.47	.13	.21	.31	.35	-	-	-
G	-.20	.00	-.17	.10	-.07	-.12	-.13	.02	-.14	.07	-	-
T	.03	.11	.06	.05	-.03	.09	.03	.03	.08	-.02	-.02	-

Note. n = Sample size. M = Mean. SD = Standard Deviation. S = Skewness. K = Kurtosis.

UPB = Unethical Pro-Organizational Behavior. AC = Affective Commitment. SD = Social Desirability.

G = Gender. T = Tenure.

Table 28

*Descriptive Statistics for the Hierarchy Culture Sample (n = 261)*

Construct	Min	Max	M	SD	S	K	UPB 1	UPB 2	UPB 3	UPB 4	UPB 5	UPB 6	AC1	AC2	AC3 R	AC4 R	AC5	AC6 R
<b>UPB</b>																		
UPB1	1	7	2.34	1.44	1.02	.03	-	-	-	-	-	-	-	-	-	-	-	-
UPB2	1	7	2.70	1.55	.59	-.79	.64	-	-	-	-	-	-	-	-	-	-	-
UPB3	1	7	3.08	1.69	.34	-1.14	.65	.69	-	-	-	-	-	-	-	-	-	-
UPB4	1	7	2.52	1.53	.86	-.38	.48	.46	.52	-	-	-	-	-	-	-	-	-
UPB5	1	7	2.00	1.35	1.59	2.06	.50	.35	.51	.49	-	-	-	-	-	-	-	-
UPB6	1	7	2.93	1.64	.42	-1.02	.59	.61	.73	.48	.52	-	-	-	-	-	-	-
<b>AC</b>																		
AC1	1	7	3.72	1.97	.06	-1.40	.06	.04	.09	.20	.09	.14	-	-	-	-	-	-
AC2	1	7	3.13	1.73	.47	-1.01	.15	.14	.19	.14	.10	.22	.49	-	-	-	-	-
AC3R	1	7	3.91	1.83	.03	-1.16	-.03	.07	.02	.04	-.08	.01	.44	.43	-	-	-	-
AC4R	1	7	3.68	1.87	.21	-1.20	-.03	.03	.09	.10	-.04	.07	.54	.59	.75	-	-	-
AC5	1	7	3.79	1.76	.04	-1.14	.12	.08	.13	.15	.09	.14	.58	.63	.60	.74	-	-
AC6R	1	7	4.03	1.87	-.03	-1.24	-.02	.07	.07	.10	-.02	.11	.54	.53	.76	.75	.68	-
<b>SD</b>																		
IM1R	1	5	3.27	1.17	.03	-1.27	-.42	-.37	-.41	-.36	-.26	-.33	-.01	-.03	.01	.02	.02	.01
IM2	1	5	3.02	1.13	.24	-1.03	-.15	-.20	-.17	-.22	-.11	-.17	.05	.09	-.03	.00	.03	.01
IM3	1	5	3.61	1.11	-.48	-.78	-.18	-.11	-.10	-.11	-.14	-.09	.09	.04	.04	.06	.06	.07
IM4R	1	5	2.57	1.02	.99	-.07	-.14	-.09	-.13	-.09	-.10	-.10	.04	.17	-.03	.06	.02	.01
IM5	1	5	2.90	1.11	.11	-.95	-.01	-.03	-.09	-.11	.04	.03	-.00	.11	-.02	.01	.10	.04
IM6R	1	5	3.41	1.28	-.31	-1.22	-.21	-.21	-.23	-.37	-.25	-.17	-.06	.12	-.02	.06	.07	.02
IM7R	1	5	3.42	1.33	-.22	-1.42	-.22	-.15	-.18	-.20	-.16	-.15	-.07	.04	-.04	.03	-.07	.02
IM8R	1	5	2.15	1.03	1.00	.50	-.04	-.07	-.13	-.12	.00	-.09	.04	.04	.05	.01	-.03	.06
IM9	1	5	3.82	1.15	-.85	-.26	-.23	-.19	-.22	-.24	-.12	-.12	-.03	-.01	.00	-.01	.00	-.02
IM10	1	5	2.92	1.10	.34	-.89	-.04	-.03	-.06	-.07	-.00	-.06	.04	.10	-.08	.03	.05	-.07
G	0	1	.37	.48	.53	-1.72	.04	.03	.06	.06	.07	.07	.06	.09	-.05	-.03	-.02	-.02
T	0	32	5.30	5.27	1.84	4.43	-.09	-.09	-.05	-.08	-.08	-.09	.16	.04	.00	.02	.03	-.04

Note. n = Sample size. M = Mean. SD = Standard Deviation. S = Skewness. K = Kurtosis. UPB = Unethical Pro-Organizational Behavior. AC = Affective Commitment. SD = Social Desirability. G = Gender. T = Tenure.

Table 28 Continued

*Descriptive Statistics for the Hierarchy Culture Sample (n = 261)*

Construct	IM1 R	IM2	IM3	IM4 R	IM5	IM6 R	IM7 R	IM8 R	IM9	IM10	G	T
<b>UPB</b>												
UPB1	-	-	-	-	-	-	-	-	-	-	-	-
UPB2	-	-	-	-	-	-	-	-	-	-	-	-
UPB3	-	-	-	-	-	-	-	-	-	-	-	-
UPB4	-	-	-	-	-	-	-	-	-	-	-	-
UPB5	-	-	-	-	-	-	-	-	-	-	-	-
UPB6	-	-	-	-	-	-	-	-	-	-	-	-
<b>AC</b>												
AC1	-	-	-	-	-	-	-	-	-	-	-	-
AC2	-	-	-	-	-	-	-	-	-	-	-	-
AC3R	-	-	-	-	-	-	-	-	-	-	-	-
AC4R	-	-	-	-	-	-	-	-	-	-	-	-
AC5	-	-	-	-	-	-	-	-	-	-	-	-
AC6R	-	-	-	-	-	-	-	-	-	-	-	-
<b>SD</b>												
IM1R	-	-	-	-	-	-	-	-	-	-	-	-
IM2	.44	-	-	-	-	-	-	-	-	-	-	-
IM3	.38	.33	-	-	-	-	-	-	-	-	-	-
IM4R	.36	.31	.27	-	-	-	-	-	-	-	-	-
IM5	.26	.28	.19	.21	-	-	-	-	-	-	-	-
IM6R	.33	.24	.21	.26	.20	-	-	-	-	-	-	-
IM7R	.32	.20	.34	.26	.08	.30	-	-	-	-	-	-
IM8R	.28	.24	.18	.28	.06	.15	.31	-	-	-	-	-
IM9	.45	.33	.50	.22	.32	.38	.49	.22	-	-	-	-
IM10	.29	.36	.23	.52	.42	.25	.17	.21	.29	-	-	-
G	-.16	-.06	-.10	.01	.11	-.22	-.02	-.07	-.05	.04	-	-
T	.12	.08	.00	.02	.04	-.08	.06	.03	.12	.00	.05	-

Note. n = Sample size. M = Mean. SD = Standard Deviation. S = Skewness. K = Kurtosis.

UPB = Unethical Pro-Organizational Behavior. AC = Affective Commitment. SD = Social Desirability.

G = Gender. T = Tenure.

## Hypotheses Summary

For this study, a total of two hypotheses were proposed, of which both were supported. Specifically, measurement invariance consisting of configural and metric invariance was confirmed for the four-factor model. In addition, structural noninvariance was found between the clan culture sample and the hierarchy sample. All hypotheses findings are briefly summarized in Table 29.

Table 29

### *Results of Predicted Hypotheses*

Hypothesis	Identification	Supported
Hypothesis 1	Measurement Invariance	Yes
Hypothesis 2	Structural Noninvariance	Yes

The first hypothesis predicted that the assessed constructs have the same meaning across the cultural groups of clan and hierarchy as indicated by metric measurement invariance. Support was indicated for Hypothesis 1 with a good model fit for the configural ( $\text{RMSEA} = .040$ ,  $\text{SRMR} = .055$ ,  $\text{TLI} = .955$ ,  $\text{CFI} = .966$ ) and the metric models ( $\text{RMSEA} = .040$ ,  $\text{SRMR} = .055$ ,  $\text{TLI} = .954$ ,  $\text{CFI} = .962$ ) as well as good comparative fit indices ( $\Delta\text{RMSEA} < .001$ ,  $\Delta\text{SRMR} < .001$ ,  $\Delta\text{CFI} = -.004$ ). This indicated that the assessed constructs had the same meaning across the cultural groups (i.e., clan and hierarchy) and fulfilled the prerequisite to continue with the structural invariance testing.

Hypothesis 2 predicted a difference in the structural relationship between affective organizational commitment and UPB by organizational culture (i.e., clan and hierarchy). Good model fit for the baseline model ( $\text{RMSEA} = .040$ ,  $\text{SRMR} = .055$ ,  $\text{TLI} = .954$ ,  $\text{CFI} =$

.962) and the partially constrained model ( $\text{RMSEA} = .040$ ,  $\text{SRMR} = .057$ ,  $\text{TLI} = .955$ ,  $\text{CFI} = .962$ ) was found. Comparing the model fit values between the baseline and the partially constrained structural model ( $\Delta\text{CFI} < .001$ ,  $\Delta\chi^2 = 2.654$ ,  $p = .265$ ), partial structural invariance was supported. Support for Hypothesis 2 was indicated by a reduced model fit of the fully constrained structural model compared to the partially constrained structural model ( $\Delta\text{CFI} = -.001$ ,  $\Delta\chi^2 = 4.514$ ,  $p = .034$ ). Further support for Hypothesis 2 was indicated by a statistically significant positive path coefficient ( $b = .153$ ,  $p = .016$ ) between affective commitment and UPB for the hierarchy culture and a statistically insignificant negative path coefficient ( $b = -.074$ ,  $p = .390$ ) for the clan culture in the partially constrained structural.

### **Summary of the Chapter**

This chapter presented the results and analysis of the study. First, the data collection and participants, group comparison results, and propensity score matching results were discussed. Then, the sample representativeness and statistical assumptions results were discussed. Furthermore, the measurement model results for both the clan culture sample and the hierarchy sample were provided. The measurement invariance testing, structural invariance testing, and descriptive statistics were also presented. The chapter concluded with a summary of the hypotheses.

## Chapter 5 - Discussion

### **Introduction**

This chapter is comprised of five sections. The results from Chapter 4 along with their relationships to relevant literature are discussed in the first section. In the second section, implications to research and HRD practitioners are addressed. The third section constitutes a discussion of the limitations of the study. Suggestions for future research are provided in the fourth section. The fifth section provides a summary of the chapter.

### **Discussion of Results**

This section discusses the results for the two research hypotheses along with comparisons to relevant literature. Similarities and differences to the literature are identified, and notable impacts to the literature are discussed. This section is grouped into two parts according to the research hypotheses addressing measurement invariance (Hypothesis 1) and structural invariance (Hypothesis 2).

#### **Measurement Invariance (Hypothesis 1)**

Hypothesis 1 predicted measurement invariance would be found, indicating that the assessed constructs have the same meaning across the two cultural groups (i.e., hierarchy culture and clan culture). Prior literature has shown support for measurement invariance of affective commitment across different organizations, industries, gender, and languages (Morin et al., 2009; Morin et al., 2011). However, no literature exists on measurement invariance for UPB.

Metric invariance was determined by constraining the factor loadings for the four-factor model (i.e., affective commitment, UPB, gender, and tenure) to be equal for like items across the two organizational culture groups. The fit indices of the metric model were evaluated along with the changes in CFI, RMSEA, and SRMR between the configural model and metric model. The model fit indices with a SRMR of .040 and a CFI of .962 showed adequate fit. Comparing the  $\Delta\text{CFI}$ ,  $\Delta\text{RMSEA}$ , and  $\Delta\text{SRMR}$  values between the configural and the metric model, the  $\Delta\text{CFI} = -.004$ ,  $\Delta\text{RMSEA} < .001$ , and  $\Delta\text{SRMR} < .001$  indicated metric invariance and provided support for Hypothesis 1. The evidence of metric invariance supported the previous literature that found measurement invariance of affective commitment (Morin et al., 2009; Morin et al., 2011). The findings added to the literature on measurement invariance of affective commitment by showing metric measurement invariance across organizational cultures. In addition, this study was the first to assess measurement invariance of UPB by confirming metric measurement invariance across organizational cultures.

The construct social desirability response bias had to be excluded from the multi-factor measurement model due to measurement noninvariance of the individual construct. While the evaluation of separate single-factor measurement models for each construct resulted in metric measurement invariance for affective commitment and UPB, social desirability response bias did not meet this criterion. Even the fitting of the configural invariance model left some reservations. Although the multi-sample data provided adequate fit, indicating configural invariance, the data for the clan culture sample indicated a too well-fitting model questioning future replication.

## **Structural Invariance (Hypothesis 2)**

With metric measurement invariance found, the requirement for the commencement of the structural invariance assessment was fulfilled. Hypothesis 2 predicted structural noninvariance would be found across the two cultural groups (i.e., hierarchy culture and clan culture) due to a hypothesized positive path coefficient between affective commitment and UPB for the hierarchy culture and a hypothesized negative path coefficient for the clan culture. The assumption was based on contradictory research findings on UPB (Matherne & Litchfield, 2012; Schutts & Shelley, 2014) and the support in the literature that clan culture discouraged unethical behavior while hierarchy culture encouraged unethical behavior (Di Stefano et al., 2017; Pilch & Turska, 2014). Therefore, the unconstrained structural baseline model was first compared to a partially constrained structural model.

Structural invariance was determined by setting the structural weights for the four-factor model (i.e., affective commitment, UPB, gender, and tenure) to be equal for like items across the two organizational culture groups. The fit indices of the structural model were evaluated along with the changes in CFI and  $\chi^2$  between the structural baseline model and the partially constrained structural model. The model fit indices with a SRMR of .055 and a CFI of .962 showed adequate fit. Comparing the  $\Delta\text{CFI}$  and  $\Delta\chi^2$  values between the structural baseline model and the partially constrained structural model, the  $\Delta\text{CFI} < .001$  and  $\Delta\chi^2 = 2.654$  ( $p = .265$ ) indicated partial structural invariance and provided support for Hypothesis 2.

Upon finding partial structural invariance, testing for full structural invariance was conducted by testing a fully constrained structural model. Comparing the CFI and  $\chi^2$  values between the partially constrained structural model and the fully constrained structural model, the  $\Delta\text{CFI} = -.001$  and  $\Delta\chi^2 = 4.514$  ( $p = .034$ ) indicated lack of full structural invariance and provided additional support for Hypothesis 2. In addition, the results of the partially constrained structural model indicated a statistically significant positive path coefficient ( $b = .153, p = .016$ ) between affective commitment and UPB for the hierarchy culture and a statistically insignificant negative path coefficient ( $b = -.074, p = .390$ ) for the clan culture.

The evidence of partial structural invariance supported the previous literature that found contradictory results for regression weights between affective commitment and UPB (Matherne & Litchfield, 2012; Schutts & Shelley, 2014). The finding of partial structural invariance also supported previous literature that found clan culture to discourage unethical behavior while hierarchy culture to encourage unethical behavior (Di Stefano et al., 2017; Pilch & Turska, 2014). However, while previous literature found significant regression weights for both organizational cultures, the present study solely found statistically significant results for the hierarchy culture.

The structural model also included the two control variables tenure and gender. Tenure was not a significant control variable ( $b = -.014, p = .301$ ) in the partially constrained structural model. Several studies on UPB assessed tenure as control variable with only one study finding tenure to be significant (Castille et al., 2016; Effelsberg et al., 2014; Kong, 2016; Lee et al., 2017; Matherne & Litchfield, 2012). The findings of this

study added to the literature by supporting previous literature findings of tenure as insignificant control variable regarding UPB.

The second control variable, gender, was found to be a significant ( $b = .347, p = .016$ ) in the partially constrained structural model. Previous literature on UPB that controlled for gender had divergent results with two studies finding gender to be significant while seven studies found gender to be insignificant (Castille et al., 2016; Effelsberg et al., 2014; Kalshoven et al., 2016; Kong, 2016; Lee et al., 2017; Matherne & Litchfield, 2012; Miao et al., 2013; Tian & Peterson, 2016; Xiaocun, 2015). The significant findings of previous studies indicated females to be less likely to engage in UPB (Kalshoven et al., 2016; Tian & Peterson, 2016). The finding of the present study indicated that males are more likely to engage in UPB, which supported previous studies that found gender to be a significant control variable.

## **Implications**

This section discusses the implications of the study. A total of eight implications are addressed. The implications are organized into implications to research and implications to business practice.

### **Implications to Research**

The study has six implications for research. First, the calls for more rigorous research methodology in the field of HRD (Reio, 2010; Nimon & Reio, 2012) were partially answered. The comparison across groups without establishing measurement invariance threatens the interpretability and validity of empirical results (Nimon & Reio,

2011; Vandenberg & Lance, 2000). In addition, testing for measurement and structural invariance requires equivalent groups (Vandenberg & Lance, 2000). The study included considerations regarding research design, sample criteria, sample equivalency, measurement invariance assessment, and structural invariance assessment.

This study first established group equivalency across the clan culture and hierarchy culture samples by conducting propensity score matching. Next, metric level measurement invariance of UPB and affective commitment across the two organizational cultures clan and hierarchy was confirmed. By assessing measurement invariance of UPB and affective commitment across two cultural types, the study provided its second contribution to research by adding to the measurement literature. An additional contribution to the measurement literature was made by finding a lack of metric measurement invariance across the two organizational cultures clan and hierarchy for the scale that was used to control for social desirability response. The utilized scale was the 10-item short version of Paulhus' (1991) impression management subscale of the balanced inventory of desirable responding. Measurement invariance of this scale has been assessed using a hierarchical IRT modeling technique, which found reliable measure results across 26 countries in Europe, Asia, and the Americas (Steenkamp et al., 2010).

Upon confirming metric measurement invariance, partial structural invariance was found. This provided the study's third contribution by adding to the structural invariance literature. The findings provided empirical evidence that the structural relationship between affective commitment and UPB varied across the two types of organizational culture. Moreover, the unethical behavior that Di Stefano et al. (2017) as

well as Pilch and Turska (2014) assessed was unethical behavior in general and not UPB specifically. Therefore, the study's fourth contribution was to the research on organizational culture by testing whether the cultural type differences also hold for affective commitment on UPB.

Fifth, contributions to research were made by evaluating the concept of UPB that has not yet received enough empirical support (Lee et al., 2017; Umphress & Bingham, 2011; Umphress et al., 2010). The contradictory findings between affective organizational commitment across the two organizational cultures of clan and hierarchy were empirical assessment via MASI (Matherne & Litchfield, 2012; Schutts & Shelley, 2014; Umphress et al., 2010). The conceptual model of UPB theorized culture as a moderating factor (Umphress & Bingham, 2011), but no empirical research on UPB has been conducted that evaluated culture as a moderator. Testing for partial structural invariance found a statistically significant positive path coefficient ( $b = .153, p = .016$ ) between affective commitment and UPB for the hierarchy culture while finding a statistically insignificant negative path coefficient ( $b = -.074, p = .390$ ) for the clan culture.

The findings of the study supported previous literature that hierarchy culture encourages unethical behavior, including UPB (Di Stefano et al., 2017; Pilch & Turska, 2014; Schutts & Shelley, 2014). However, the findings of the study did not support previous literature that clan culture discourages unethical behavior, including UPB, due to the lack of statistical significance of the negative path coefficient (Di Stefano et al., 2017; Matherne & Litchfield, 2012; Pilch & Turska, 2014). In addition, the findings of

the study indicated that affective organizational commitment and organizational culture are useful constructs regarding the conceptual model of UPB. The statistically significant positive path coefficient between affective commitment and UPB for the hierarchy culture sample indicated that affective organizational commitment is a valid antecedent of UPB. Furthermore, the statistically insignificant negative path coefficient between affective commitment and UPB for the clan culture sample indicated that organizational culture is an important moderator within the conceptual model of UPB.

Lastly, the study contributed to research regarding the use of MTurk® as a method for data collection. Recommendations in the literature were followed to set the HIT approval rate to greater than 95 in order to capture a large breadth of workers while still ensuring to get quality data (Berinsky et al., 2012; Chambers & Nimon, 2018). This worker requirement only gave MTurk® workers with a high requester satisfaction record access to the surveys of this study. Of the respondents who successfully completed all three surveys, only one response missed more than one of the three IMCs, which is an indicator that the MTurk® workers provided quality data.

Based on the literature, MTurk® has been used successfully for longitudinal studies with response rates ranging from 60% to 75% (Berinsky et al., 2012; Buhrmester et al., 2011; Stoycheff, 2016). For the present study, the response rate was found to be higher. Out of 2,084 MTurk® workers who were invited to take survey 2, 1,639 received payment in MTurk®, which amounts to 78.65%. The response rate increased to 79.58% for survey 3 with 978 MTurk® workers receiving payment out of 1,229 who were invited.

Assessing the representativeness of the MTurk® worker sample to the U.S. population, the MTurk® worker sample showed to have a higher percentage of females, a higher percentage of Caucasian or Whites, and failed to represent Americans with less than a high school degree. These findings supported previous literature that indicated MTurk® workers to be dominantly female, higher educated, and less racially diverse than the general U.S. population (Buhrmester et al., 2011; Paolacci et al., 2010). Keeping the limitations of the MTurk® worker demographics in mind, MTurk® showed to be a data collection method that provided quality data and proved to be a great tool for longitudinal data collection.

### **Implications to Practice**

The study has two implications for managers and business practice. First, the study is significant to practitioners by contributing to the knowledge base in HRD as it addresses unethical employee behavior that can threaten organizations' success and diminish the public's confidence in organizations (Castille et al., 2016). Ethical employee behavior is critical for organizations' long-term success (Vardi, 2001). Organizational members are continuously pressured to produce results that satisfy stakeholders, which can encourage unethical behavior such as UPB (Castille et al., 2016; Gilley et al., 1999).

Organizations and managers take an important part in the creation of an ethical work environment (Di Stefano et al., 2017). While organizations and managers encourage employee commitment to the organization, it is important to understand that increased organizational commitment is not limited to just positive outcomes. The

current study found that organizational commitment can encourage UPB within an organization with a hierarchy culture. Such knowledge is important to organizations and managers to know whether UPB could be an issue in their organization based on its organizational culture. This knowledge will allow organizations and managers to monitor and address potential issues concerning UPB appropriately, especially since empirical evidence indicates the possibility of a contagion effect of UPB (Xiaocun, 2015). The contagion effect of UPB is defined as the effect of co-workers' UPB that influences employees' UPB (Xiaocun, 2015). When individuals exhibit high levels of organizational identification, a positive relationship has been found between individuals UPB and that of their co-workers (Xiaocun, 2015). Organizations and managers also need to be aware of gender differences regarding inclination toward engaging in UPB. Gender was found to be a significant control variable in the structural model indicating that males are more likely to engage in UPB.

Second, the study is significant to the field of OD/CM as well as the shaping component of HRD (Wang et al., 2017). The culture of an organization may be an important tool in reducing UPB. Organizations and managers can take the findings of the study into consideration for a change of the organizational culture. Findings of the study suggest that for organizations with hierarchy cultures to limit the propensity to commit UPB among committed employees, a shift towards a more clan-like organizational culture could be an answer. In addition, the findings of the study provide information for managers who currently navigate through an organizational change process to assess

whether the new target culture might encourage UPB in committed employees and potentially be on the lookout for such behavior.

### **Limitations**

There were five limitations associated with the present study. First, collected responses might not accurately reflect the true culture of the organization. In the present study, the organizational culture assessment was based on the perception of just one individual, which is highly subjective.

Second, the items for UPB are prone to social desirability bias because the respondents were asked about their likelihood to commit certain unethical acts (Podsakoff et al., 2003; Podsakoff et al., 2012). The tendency of individuals to respond in a way that is socially desirable can contaminate the true relationship between variables by inflating the relationship between the predictor and criterion variables (Fernandes & Randall, 1992; Podsakoff et al., 2003; Triki et al., 2015; Zerbe & Paulhus, 1987). As a remedy, the present study controlled for social desirability response bias (Podsakoff et al., 2003; Triki et al., 2015; Zerbe & Paulhus, 1987). However, due to lack of measurement invariance, the social desirability response bias construct could not be added to the structural model for the assessment of structural invariance.

Third, there was the risk that the obtained sample was not entirely representative of the desired population. However, an effort was made to produce a rigorous and generalizable study by utilizing a broad sample and by employing a deliberate survey design as outlined in the survey design section of this paper. Evaluation and comparison

of the demographic variables of the obtained sample compared to the BLS/USCB demographic profile provided confidence in the sample's representativeness.

Fourth, there is the issue of generalizability beyond the sample population. This study focused on nonmanagement full-time U.S. employees between the ages of 18 and 54 working at organizations in the service sector. Although the majority of the employed population in the United States works full-time within the service sector (BLS, 2017ab), caution is warranted for organizational leadership to generalize these findings to managerial employees. A previous study on UPB assessing only managers found that managers at higher managerial levels were more likely to engage in UPB (Miao et al., 2013). Therefore, it cannot be assumed that organizational culture influences UPB in managerial employees as it does in nonmanagerial employees.

Lastly, the collection of the dependent variable at two points in time would have allowed for the testing of invariance of UPB across the two waves from Survey 2 to Survey 3 (Cole & Maxwell, 2003). However, this analysis was not conducted in the study due to more robust sample requirements than could be accomplished. The major limiting factor was financial considerations of the present study.

### **Suggestions for Future Research**

The study created at least six directions for future research. First, the study could be replicated to evaluate the structural invariance across the cultural groups for industry sectors other than the service sector. Second, the study could be replicated to include all four organizational cultures (i.e., adhocracy, clan, hierarchy, and market) as defined by

the CVF. Third, the study could be replicated to include managerial employees. These three recommendations allow for the generalizability of the findings beyond the presented study.

Fourth, a comparison study could be conducted by replicating the statistical analyses without equating the clan culture sample and the hierarchy culture sample via propensity score matching. The sample for the comparative study would be the original, unmatched samples for clan culture ( $n = 309$ ) and hierarchy culture ( $n = 344$ ) that were derived after the data cleaning. Conducting the same analyses using these nonequivalent data samples would result in a comparative statistical output that could be evaluated against the data results equated by propensity score matching. Comparison of the results for non-equated samples and equated samples could inform researchers about the efficacy of utilizing propensity score matching for future studies.

Fifth, a second comparison study could be conducted by replicating the statistical analyses using the shortened organizational commitment questionnaire (Mowday et al., 1979) to assess affective organizational commitment. The organizational commitment questionnaire (Mowday et al., 1979) was used by one of the studies that assessed affective organizational commitment and UPB (Schutts & Shelley, 2014). Conducting the same analyses using a different scale would result in a comparative statistical output that could be evaluated against the data results that used the affective commitment scale of the three-component model of organizational commitment (Meyer et al., 1993). Comparison of the results could inform researchers about the influence of diverse scales

on the structural invariance of affective organizational comments on UPB across the two organizational cultures clan and hierarchy.

Sixth, the study could be replicated with a different scale for the assessment of social desirability response bias. The 10-item short version of Paulhus' (1991) impression management subscale of the balanced inventory of desirable responding lacked metric measurement invariance and had to be excluded from the structural model. Social desirability response bias was found to be a significant control variable in previous studies on UPB (Chen et al., 2016; Umphress et al., 2010). Therefore, identifying a scale for social desirability response bias that meets metric measurement invariance across the two organizational cultures of clan and hierarchy would allow researchers to control for social desirability response bias in the structural model.

### **Summary of the Chapter**

This chapter contained five sections. First, Chapter 4 results and relationships to relevant literature were discussed, followed by a summary of implications for theory, research, and practice. Next, the chapter discussed the limitations of the study and provided recommendations for future research. The chapter concluded with a summary.

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## Appendix A. Pilot Study

Testing for structural invariance requires equivalent of the groups (Vandenberg & Lance, 2000). Industries can have prevailing organizational cultures (Cameron & Quinn, 2005). To properly assess structural invariance based on the grouping variable organizational culture (i.e., clan and hierarchy), it is important to determine whether equivalent organizational culture groups can be created. A pilot study was conducted in order to gather organizational culture and demographic characteristic data from an MTurk® sample. The purpose was to determine group similarities and differences between full-time U.S. employees working at organizations with different organizational cultures.

Organizational culture was measured with the Organizational Culture Assessment Instrument (OCAI, Cameron & Quinn, 2005). The scale has been validated with a 5-point Likert-type scale as well as 7-point Likert-type scale (Cameron & Quinn, 2005). For purposes of the present study, the 5-point Likert-type scale with 1 indicating *strongly disagree* and 5 indicating *strongly agree* was chosen, as it is the most commonly used Likert-type scale option for this scale (Cameron & Quinn, 2005; DiStefano & Motl, 2006; Oney-Yazıcı, Giritli, Topcu-Oraz, & Acar, 2007; Padma & Nair, 2009; Shurbagi & Zahari, 2012; Zahari & Shurbagi, 2012). The scale consists of four subscales with six items each. The clan culture subscale asks respondents to indicate how much they agree with statements such as “The glue that holds the organization together is loyalty and mutual trust. Commitment to this organization runs high.” The adhocracy culture subscale asks respondents to indicate how much they agree with statements such as “The glue that holds the organization together is commitment to innovation and development.

## Appendix A. Continued

There is an emphasis on being on the cutting edge.” The market culture subscale asks respondents to indicate how much they agree with statements such as “The glue that holds the organization together is the emphasis on achievement and goal accomplishment. Aggressiveness and winning are common themes.” The hierarchy culture subscale asks respondents to indicate how much they agree with statements such as “The glue that holds the organization together is formal rules and policies. Maintaining a smooth-running organization is important.” The first-order factor structure of the four subscales has been demonstrated with factor loadings ranging from .56 to .79 (Cameron & Quinn, 2005; Heritage, Pollock, & Roberts, 2014). The four subscales have adequate reliability with reported coefficient alpha values for clan culture ranging from .70 to .86, for adhocracy culture from .67 to .86, for market culture from .71 to .84, and for hierarchy culture from .63 to .95 (Cameron & Quinn, 2005; DiStefano & Motl, 2006; Padma & Nair, 2009; Shurbagi & Zahari, 2012). The scale has shown to possess convergent as well as discriminant validity through the multidimensional scaling technique with a Shepherd and Kruskal’s stress coefficient of .056 and a Guttman and Lingoes’s coefficient of alienation of .076 (Quinn & Spreitzer, 1991).

For this pilot, the population of interest was the same as the one for the main study. The Institutional Review Board (IRB) procedures for The University of Texas at Tyler was followed and approval was obtained before any data were collected. The online survey platform Qualtrics® was utilized to collect data at one point in time. Study participants were recruited with the assistance of MTurk® and asked to complete an anonymous 2-3-minute multiple-choice survey.

## Appendix A. Continued

Surveys are posted as Human Intelligence Tasks (HITs) that allow short survey descriptions on the HIT screens. A HIT was created in MTurk® that provided the title, “Answer a survey 2-3-minute multiple-choice about you and your work environment”; the description “Give us some general information about you, your job, and your organization”; and the keywords “survey, organization, job, work environment, demographics”. Additional worker requirements were selected: location of U.S., employment status of full-time, and a HIT approval rate greater than 95%, in order to capture a large breadth of workers. The HIT visibility automatic set to private due to the worker requirement selection, which allowed only workers who met the selected requirements to see and complete the HIT. A hyperlink to the survey on the Qualtrics® survey tool was provided on the HIT screen along with the survey topic, the time requirements, as well as information on the required data quality. Participants received a minimal financial incentive of \$0.35 for completing the anonymous survey, which was established as customary payment for survey takers solicited on MTurk® after scanning solicitations for surveys at the time. Also, as part of creating the HIT, the number of unique worker assignments was set to 500, which was the desired number of completed surveys. In accordance with the guidelines provided by Henson and Roberts (2006) who recommend a minimum ratio of 10:1, a minimum sample size of 240 was desired for the purpose of the study, because the OCAI (Cameron & Quinn, 2005) consists of four subscales with six items each.

## Appendix A. Continued

For the survey, the HIT was published February 19, 2018, and closed February 26, 2018. All survey items were designed to present the respondents with answer choices from which they are required to choose (i.e., forced response) and with only one possible answer for each question. Although the MTurk® location requirement was set to United States and the employment status was set to full-time to ensure the respondents are living and working in the United States, there were three screening questions that participants had to answer before taking the survey to confirm that the MTurk® requirements worked. The first screening question was to ensure that the participants live and work in the United States, which ensures that the location requirement set on the MTurk® worker requirements was satisfied. Screening question number two asked for full-time employment status. The purpose of the first two screening questions was to sort out respondents who should not have received access to the survey due to not meeting the specified worker requirements MTurk®. The third screening question was a bot check with the purpose to sort out bots from participating in the survey (Rouse, 2015). MTurk® (2017) does not condone the use of bots. Although MTurk® requires workers to be at least 18 years to be able to sign up, survey respondents had to confirm meeting the minimum age requirement of 18 on the informed consent form as an additional check. The informed consent form records the participants' consent in participating in the study and informs them of the purpose of the study, their rights, assurance of the respondents' privacy, as well as the requirements of the anonymous survey. Participants had to agree to the informed consent before taking the survey.

## Appendix A. Continued

In addition, participants were informed that there are no right or wrong answers to reduce evaluation apprehension (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). The items for the organizational culture scale were broken up by an instructional manipulation check that served the purpose of confirming respondents' engagement (Oppenheimer, Meyvis, & Davidenko, 2009). The demographic questions were placed at the end of the survey to prevent a priming effect that influences respondents' answers to subsequent questions (Podsakoff et al., 2003). Demographic information that were collected, consisted of demographic and work characteristic questions such as gender, age, race/ethnicity, educational level, industry, company size, company age, tenure with the company, and manager/non-manager, as they have been frequently reported related to organizational culture (Cameron & Quinn, 2005; Dastmalchian, Lee, & Ng, 2000; Di Stefano et al., 2017; Heritage, Pollock, & Roberts, 2014; Lau & Ngo, 2004; Padma & Nair, 2009; Ralston, Terpstra-Tong, Terpstra, Wang, X., & Egri, 2006). The breakdown for gender (i.e., male or female), age (i.e., 18-24, 25-54, and 55+), race/ethnicity (i.e., African American or Black, American Indian/Other Native American, Asian or Pacific Islander, Caucasian or White (other than Hispanic), Hispanic, and other), and company age (less than 1 year, 1-4 years, 5-9 years, 10 years and older) were based on the categories from the Bureau of Labor Statistics (2017). The breakdown for educational attainment (less than high school, high school graduate, some college, 2-year degree, 4-year degree, Master's or professional degree, and Doctorate) was based on the United States Census Bureau (2017).

## Appendix A. Continued

For the breakdown of industry, a list of 20 industry classifications were provided based on the Occupational Information Network (O\*NET, 2017). Additional demographics questions such as tenure with company (less than 1 year, 1-2 years, 3-4 years, 5-7 years, and more than 7 years), manager/non-manager, and company size (fewer than 100 employees, 101-1,000 employees, and more than 1,000 employees) were added based on literature on organizational culture (Cameron & Quinn, 2005; Dastmalchian, Lee, & Ng, 2000; Di Stefano et al., 2017; Heritage, Pollock, & Roberts, 2014; Lau & Ngo, 2004; Padma & Nair, 2009; Ralston, Terpstra-Tong, Terpstra, Wang, X., & Egri, 2006).

End of survey messages for successfully completed surveys contained a unique code for each respondent to ensure that only valid codes were entered for payment. No back button was available to avoid participants changing their answers from their original selection and thus avoiding the common method bias of consistency motif (Podsakoff et al., 2012). No counterbalancing of items was done, although it is an acceptable method for controlling CMV (Podsakoff et al., 2003). Instead, scale anchors and ordering of items was not be altered to avoid changing the meaning of the constructs or compromise the validity of the scales (Podsakoff et al., 2003). The likelihood of non-response was controlled by having The University of Texas at Tyler's banner placed at the top of the survey screen to indicate official sponsorship in addition to the implementation of a forced-response feature for each question (Fan & Yan, 2010). The occurrence of drop-offs was addressed by implementation of a progress bar (Villar, Callegaro, & Yang, 2013).

## Appendix A. Continued

All questions were set up as forced responses to avoid issues of missing data (Wolf, Harrington, Clark, & Miller, 2013). The survey took less than 5-minutes to complete (i.e.,  $M = 3.57$  minutes,  $SD = 1.75$ ), which reduced the potential for survey fatigue (Dillman, 2007).

The collected data were retrieved from Qualtrics<sup>®</sup> ( $n = 680$ ) as comma separated values (csv) file. A csv file was also retrieved from MTurk<sup>®</sup> containing the number of workers who submitted a unique payment code ( $n = 500$ ). The response ID code from the Qualtrics<sup>®</sup> results file was matched to a unique payment code from the MTurk<sup>®</sup> file to check that valid codes had been entered. Two codes did not provide valid codes and were thus denied payment. The retrieved data from Qualtrics<sup>®</sup> was further cleaned to prepare for data analysis.

**Data Cleaning.** The data analysis of the responses retrieved from Qualtrics<sup>®</sup> ( $n = 680$ ) was conducted using the software packages R<sup>®</sup> 3.5.0 and IBM<sup>®</sup> SPSS<sup>®</sup> 25.0.0. The first step of the data cleaning process involved the removal of the respondents' IP addresses to ensure the anonymity of survey participants. Responses that did not pass the screening questions were removed to limit data to cases that meet sample requirements. A total of 18 responses were removed that failed screening question one along with 23 responses that failed screening question two and 61 responses that failed the bot check. Responses that passed the screening questions, however, did not agree to informed consent ( $n = 1$ ) were removed as well. All questions in the survey were required to be answered, therefore no missing data remained at this point for respondents who completed the survey.

## Appendix A. Continued

Furthermore, all responses that did not pass the instructional manipulation check ( $n = 71$ ) were eliminated based on the assumption that respondents who do not pass are not fully engaged (Oppenheimer et al., 2009). At this point, remaining incomplete responses ( $n = 7$ ) were removed. Additional data that was removed based on indicators of respondents' lack of full engagement were responses that were completed in less than 1 minute or that took longer than 9 minutes to complete ( $n = 12$ ). The reasonable completion range was based on the average survey completion time of 3 minutes and 34 seconds ( $SD = 1.75$ ). Straight-lining was not considered as data removal criteria due to lack of full engagement of respondents because the survey did not contain any reverse coded items (Cole, McCormick, & Gonyea, 2012). The final sample size was 487 after the completion of the data cleaning process. The cleaned data file was saved for subsequent analysis.

**Data analysis.** Once the data were considered sufficiently cleaned, the collected data were split into four groups based on the identified dominant organizational culture. Findings of studies on several thousand organizations indicated that 80% of organizations identify with a dominant cultural type (Cameron & Quinn, 2005). The dominant culture is “based on the quadrant that receives the most emphasis” (Cameron & Quinn, 2005, p. 153). In addition, the strength of the dominant organizational culture increases with the increase in the obtained score (Cameron & Quinn, 2005). However, there is “no universal number exists for determining differences among quadrants in the competing values framework” (K. S. Cameron, personal communication, February 8, 2018).

## Appendix A. Continued

A review of the literature suggests identifying the dominant culture by selecting the cultural type with the highest mean score (Arditi et al., 2017; Berrio, 2003; Cameron & Quinn, 2005; Oney-Yazıcı, Giritli, Topcu-Oraz, & Acar, 2007; Shurbagi & Zahari, 2012; Zahari & Shurbagi, 2012). In accordance with the findings of the literature review, the dominant organizational culture of each respondent was identified by assessing the item mean scores for each cultural type. If two or more cultural types of a respondent had the same mean score, the response was removed from the data set, because it did not allow for the identification of one dominant culture. A total of 236 (48.46%) responses had to be removed due to no dominant culture ( $n = 114$ ) or having a dominant culture that is not a focus of this study such as adhocracy ( $n = 23$ ) and market ( $n = 99$ ). Analogous to the main study, the interest lies with the two cultures clan and hierarchy. Therefore, only the 133 cases for clan culture and 118 cases for hierarchy culture were further evaluated. Table A1 provides the frequency distribution of demographics and work characteristics of the total sample ( $n = 251$ ) as well as the clan culture ( $n = 133$ ) and the hierarchy culture ( $n = 118$ ) sample.

Appendix A. Continued

Table A1

*Demographic and Work Characteristics from Pilot Study  
(n = 251 total sample; n = 133 clan culture; n = 118 hierarchy culture)*

Characteristic	Total Sample		Clan Culture		Hierarchy Culture	
	n	%	n	%	n	%
<b>Gender</b>						
Male	114	45.4	53	39.8	61	51.7
Female	137	54.6	80	60.2	57	48.3
<b>Age</b>						
18-24	12	4.8	5	3.8	7	6.0
25-54	228	90.8	126	94.7	102	86.4
55+	11	4.4	2	1.5	9	7.6
<b>Race/Ethnicity</b>						
African American or Black	16	6.4	7	5.3	9	7.6
American Indian/Other Native American	0	0.0	0	0.0	0	0.0
Asian or Pacific Islander	14	5.6	5	3.8	9	7.6
Caucasian or White (other than Hispanic)	204	81.3	113	85.0	91	77.1
Hispanic	11	4.4	5	3.8	6	5.1
Other	6	2.4	3	2.3	3	2.5
<b>Highest Level of Education</b>						
Less than high school	1	0.4	0	0.0	1	0.8
High school graduate	12	4.8	8	6.0	4	3.4
Some college	45	17.9	22	16.5	23	19.5
2-year degree	18	7.2	9	6.8	9	7.6
4-year degree	110	43.8	60	45.1	50	42.4
Master's or Professional degree	63	25.1	33	24.8	30	25.4
Doctorate	2	0.8	1	0.8	1	0.8
<b>Industry</b>						
Accommodation and Food Services	5	2.0	4	3.0	1	0.8
Administrative and Support Services	11	4.4	3	2.3	8	6.8
Agriculture, Forestry, Fishing, and Hunting	4	1.6	2	1.5	2	1.7
Arts, Entertainment, and Recreation	6	2.4	3	2.3	3	2.5

Appendix A. Continued

Table A1 (Continued)

*Demographic and Work Characteristics from Pilot Study  
(n = 251 total sample; n = 133 clan culture; n = 118 hierarchy culture)*

Characteristic	Total Sample		Clan Culture		Hierarchy Culture	
	n	%	n	%	n	%
<b>Industry</b>						
Construction	8	3.2	6	4.5	2	1.7
Educational Services	48	19.1	26	19.5	22	18.6
Finance and Insurance	30	12.0	16	12.0	14	11.9
Government	24	9.6	7	5.3	17	14.4
Health Care and Social Assistance	32	12.7	24	18.0	8	6.8
Information (including Information Technology)	15	6.0	9	6.8	6	5.0
Management of Companies and Enterprises	5	2.0	3	2.3	2	1.7
Manufacturing	12	4.8	6	4.5	6	5.1
Mining, Quarrying, and Oil and Gas Extraction	1	0.4	0	0.0	1	0.8
Other Services (except Public Administration)	3	1.2	1	0.8	2	1.7
Professional, Scientific, and Technical Services	12	4.8	4	3.0	8	6.8
Real Estate and Rental and Leasing	2	1.0	1	0.8	1	0.8
Retail Trade	22	8.8	11	8.3	11	9.3
Transportation and Warehousing	4	1.6	2	1.5	2	1.7
Utilities	2	1.0	1	0.8	1	0.8
Wholesale Trade	5	2.0	4	3.0	1	.08
<b>Company Size</b>						
fewer than 100 employees	76	30.3	54	40.6	22	18.6
101-1,000 employees	98	39.0	48	36.1	50	42.4
more than 1,000 employees	77	30.7	31	23.3	46	39.0
<b>Company Age</b>						
Less than 1 year	1	0.4	1	0.8	0	0.0
1-4 years	8	3.2	5	3.8	3	2.5
5-9 years	19	7.6	12	9.0	7	5.9
10 years and older	223	88.8	115	86.4	108	91.6

## Appendix A. Continued

Table A1 (Continued)

*Demographic and Work Characteristics from Pilot Study  
(n = 251 total sample; n = 133 clan culture; n = 118 hierarchy culture)*

Characteristic	Total Sample		Clan Culture		Hierarchy Culture	
	n	%	n	%	n	%
<b>Tenure</b>						
Less than 1 year	22	8.8	11	8.3	11	9.3
1-2 years	60	23.9	34	25.6	26	22.0
3-4 years	47	18.7	29	21.8	18	15.3
5-7 years	28	11.2	12	9.0	16	13.6
More than 7 years	94	37.5	47	35.3	47	39.8
<b>Management</b>						
Yes	108	43.0	68	51.1	40	33.9
No	143	57.0	65	48.9	78	66.1

The purpose of this pilot study was to determine group similarities and differences between full-time U.S. employees working at organizations with different organizational cultures, as this is a required component when testing for structural invariance (Vandenberg & Lance, 2000). Once the collected survey responses were sorted based on the dominant cultural type, a series of Pearson's chi-square tests were conducted on the demographic variables of gender, age, race/ethnicity, educational level, industry, company size, company age, tenure with the company, and manager/non-manager with organizational culture (i.e., clan culture and the hierarchy culture) as grouping variable. Statistical significance was determined at  $p \leq .05$  and practical significance was determined at a Cramer's  $V \geq .10$  (Huck, 2012). The groups based on age, company size, and management were found to be statistically and practically significantly different.

## Appendix A. Continued

The *p*-values ranged from ≤ .01 to .04 and the Cramer's *V* values ranged from .16 to .25 (see Table A2). Although not statistically significant, industry had a medium practical significance with a Cramer's *V* of .30 (see Table A2).

Table A2

*Group Comparison Chi-Square Results for the Pooled Sample of Clan Culture and Hierarchy Culture*

Characteristic	$\chi^2$	df	<i>p</i> -value	Cramer's <i>V</i>
Gender	3.54	1	.06	.12
Age	6.44	2	.04	.16
Race/Ethnicity	2.97	4	.56	.11
Highest Level of Education	2.52	6	.87	.10
Industry	23.16	19	.23	.30
Company Size	15.60	2	.00	.25
Company Age	2.15	3	.54	.10
Tenure	3.33	4	.56	.12
Management	7.57	1	.01	.17

The results of this pilot study helped to further define the population of the main study. Achieving equivalent groups is important for the main study when testing for structural invariance (Vandenberg & Lance, 2000). If found group differences cannot be equated for, they have to be considered as confounding variables of organizational culture that need to be controlled to make a valid interpretation of a causal relationship (Frank, 2000).

## Appendix A. Continued

A review of Table A2 indicated that the majority of age ranges in the MTurk® sample are concentrated in the 18-24 and 25-54 age groups, which combined encompass the generational cohorts Generation X and Millennials (Fry, 2015). These two generational cohorts are currently the largest in the labor force (Fry, 2015). Focusing on these generational cohorts can have practical implications for HRD/OD. In addition, focusing on nonmanagers would be of interest as the two studies on UPB on which this study builds, assessed primarily nonmanagers with the sample of restaurant workers consisting of 86.6% nonmanagers and the sample of fraternity/sorority students consisting of 100% nonmanagers (Matherne & Litchfield, 2012; Schutts & Shelley, 2014). The statistical and practical significant results for group differences by company size were expected as “organizations tend to progress through a predictable pattern of organization culture changes” (Cameron & Quinn, 2005, p. 53). Organizations tend to start out as adhocracy cultures and progress through the organizational cultures of clan, hierarchy, and market as they continued to grow (Cameron & Quinn, 2005). However, further research into company size grouping indicated that 47.82% of U.S. workers are employed at firms with 1-499 employees while 52.18% of U.S. workers are employed at firms with 500 or more employees (BLS, 2017c). Moreover, grouping the industry data by major industry sector (i.e., goods-producing excluding agriculture, services-providing excluding special industries, and agriculture / forestry / fishing / hunting) based on the Bureau of Labor Statistics (BLS, 2017a), indicated that 90% of the MTurk® sample are working in the service-providing sector.

## Appendix A. Continued

Considering that the proportion of MTurk® sample working in the service-providing sector closely represents the 86.7% of the U.S. population working in the service-providing sector (BLS, 2017a), focusing on the services-providing sector would be of interest for the main study.

Based on the observations of the initial analysis of the pilot study data, the same data were reanalyzed. Focusing in on nonmanagers and the generational cohorts Generation X and Millennials, 108 responses from managers and five responses from respondent age 55 and older were removed. In addition, the industry data were regrouped by combining all service sector industries and removing 25 non-service sector responses, which reduced the combined pilot sample to 127 responses. To allow for a regrouping based on company size to 1-499 employees and 500 or more employees, a follow-up survey was sent out the 53 respondent who indicated their company size to be between 101 and 1,000 employees. The survey consisted of a bot check, the informed consent form for the pilot study, and one multiple-choice questions to indicate their company size as either 1-499 employees or 500 or more employees. A HIT was created on MTurk® and the worker requirement was set that only allowed the targeted 53 respondents to complete this HIT. An email was sent out to these 53 respondents with a link to the HIT asking them to complete this follow-up HIT within three days for \$.10. A total of 53 of the 53 (100%) completed the follow-up survey. Table A3 provides the frequency distribution of demographics and work characteristics of the modified total sample ( $n = 127$ ) as well as the clan culture ( $n = 58$ ) and the hierarchy culture ( $n = 69$ ) sample.

Appendix A. Continued

Table A3

*Demographic and Work Characteristics from Pilot Study for Nonmanagement, Age 18-54, and Service Industry  
(n = 127 total sample; n = 58 clan culture; n = 69 hierarchy culture)*

Characteristic	Total Sample		Clan Culture		Hierarchy Culture	
	n	%	n	%	n	%
Gender						
Male	52	59.1	22	37.9	30	43.5
Female	75	40.9	36	62.1	39	56.5
Age						
18-24	9	7.1	5	8.6	4	5.8
25-54	118	92.9	53	91.4	65	94.2
Race/Ethnicity						
African American or Black	8	6.3	1	1.7	7	10.1
Asian or Pacific Islander	10	7.9	2	3.4	8	11.6
Caucasian or White (other than Hispanic)	99	88.0	53	91.4	46	66.7
Hispanic	7	5.5	1	1.7	6	8.7
Other	3	2.4	1	1.7	2	2.9
Highest Level of Education						
Less than high school	0	0	0	0	0	0
High school graduate	7	5.5	5	8.6	2	2.9
Some college	24	18.9	10	17.2	14	20.3
2-year degree	7	5.5	3	5.2	4	5.8
4-year degree	55	43.3	22	37.9	33	47.8
Master's or Professional degree	32	25.2	17	29.3	15	21.7
Doctorate	2	1.6	1	1.7	1	1.4
Company Size						
1-499 employees	55	43.3	27	46.6	28	40.6
500 or more employees	72	56.7	31	53.4	41	59.4
Company Age						
Less than 1 year	1	0.8	1	1.7	0	0
1-4 years	3	2.4	0	0	3	4.3
5-9 years	5	3.9	3	5.2	2	2.9
10 years and older	118	92.9	54	93.1	64	92.7
Tenure						
Less than 1 year	13	10.2	5	8.6	8	11.6
1-2 years	42	33.1	22	37.9	20	29.0
3-4 years	19	15.0	10	17.2	9	13.0
5-7 years	15	11.8	4	6.9	11	15.9
More than 7 years	38	29.9	17	29.3	21	30.4

## Appendix A. Continued

Another series of Pearson's chi-square tests were conducted with the modified data of the pilot study based on the demographic variables of gender, age, race/ethnicity, educational level, company size, company age, and tenure with organizational culture (i.e., clan culture and the hierarchy culture) as grouping variable. Statistical significance was determined at  $p \leq .05$  and practical significance was determined at a Cramer's  $V \geq .10$  (Huck, 2012). The groups based on race/ethnicity were found to be statistically and practically significantly different. The  $p$ -value was  $\leq .05$  and the Cramer's  $V$  value was .30 (see Table A4). Another Pearson's chi-square test was conducted to assess if grouping race/ethnicity by Caucasian or White and not Caucasian or White would resolve the findings of statistically and practically significantly difference. The Pearson's chi-square remained statistically and practically significant ( $\chi^2 = 11.20, p = 0.01, V = .30$ ). A review of the literature did not indicate that race and organizational culture strongly correlated. In addition, it needs to be noted that the group difference is based on a small sample due do focusing in on a more specific population based on the initial group difference results based on the original pilot data. If the issue arises in the main study, propensity score matching is to be conducted to equate these differences (Rubin, 1997).

## Appendix A. Continued

Table A4

*Group Comparison Chi-Square Results for the Pooled Sample of Clan Culture and Hierarchy Culture for Nonmanagement, Age 18-54, and Service Industry*

Characteristic	$\chi^2$	df	p-value	Cramer's V
Gender	.40	1	.53	.06
Age	.38	1	.54	.05
Race/Ethnicity	11.63	4	.02	.30
Highest Level of Education	3.49	5	.62	.17
Company Size	.46	1	.50	.06
Company Age	4.13	3	.25	.18
Tenure	3.6	4	.46	.17

Achieving equivalent groups is important for the main study when testing for structural invariance (Vandenberg & Lance, 2000). The results of this pilot study indicated that access to an employee group working at organizations with clan culture and a comparable employee group working at organizations with hierarchy culture is possible using MTurk®, which provides support for the feasibility of the main study. If the collected data for the main study is not equal across the two cultural groups, propensity score matching is to be conducted to equate the groups by their covariates (Rubin, 1997).

## Appendix B. UPB Studies Overview

Table A5

*UPB Studies Summary*

Authors	Sample	Independent Variable(s)	Mediator(s)	Moderator(s)	Dependent Variable(s)	Control Variable(s)
Umphress, Bingham, and Mitchell (2010)	Study 1 – 224 individuals from diverse backgrounds serving on jury duty	Organizational Identification		Positive Reciprocity Beliefs*	UPB	Age Position
Matherne and Litchfield (2012)	Study 2 – 148 StudyResponse.com participants from diverse backgrounds	Affective Commitment*		Moral Identity*	UPB	Age Gender Hours worked Position Tenure
Miao, Newman, Yu, and Xu (2013)	137 restaurant workers					
	239 full-time public-sector employees in China	Supervisor Ethical Leadership*		Subordinate Identification with Supervisor*	UPB	Gender

Note. Significant variables are marked with \*.

Appendix B. Continued

Table A5 (Continued)

*UPB Studies Overview*

Authors	Sample	Independent Variable(s)	Mediator(s)	Moderator(s)	Dependent Variable(s)	Control Variable(s)
Effelsberg, Solga, and Gurt (2014)	Study 1 – 290 individuals from diverse organizations and professional backgrounds in Germany	Transformational Leadership*	Organizational Identification*	Disposition towards Unethical Behavior*	UPB	Age Gender Tenure
Schutts and Shelley (2014)	Study 2 – 319 employed students seeking a degree in human resource management and marketing	Person – Organization Fit*	Organizational Identification*		UPB	
	170 undergraduate fraternity/sorority students		Organizational Commitment*			

---

Note. Significant variables are marked with \*.

Appendix B. Continued

Table A5 (Continued)

*UPB Studies Overview*

Authors	Sample	Independent Variable(s)	Mediator(s)	Moderator(s)	Dependent Variable(s)	Control Variable(s)
Effelsberg and Solga (2015)	112 managers and 900 of their direct reports from three organizations in the banking, insurance, and high-tech manufacturing sector in Germany	Leaders' Organizational Identification*	Follower-Perceived Transformational Leadership		UPB	Position
Graham, Ziegert, and Capitano (2015)	74 MTurk workers	Leadership Style (transactional/transformational)*		Promotion Focus (high/low)*	UPB	
Verma and Mohapatra (2015)	211 alumni of two colleges in Bangalore that received degrees in engineering or an MBA	Ethical Culture*	Organizational identification	Framing Condition (gain/loss language)*	Individual Ethical Ideology (idealism/relativism)*	UPB

Note. Significant variables are marked with \*.

Appendix B. Continued

Table A5 (Continued)

*UPB Studies Overview*

Authors	Sample	Independent Variable(s)	Mediator(s)	Moderator(s)	Dependent Variable(s)	Control Variable(s)
Xiaocun (2015)	362 grassroots staff from 4 enterprises	Colleagues UPB*	Moral Justification*	Organizational Identification*	Individual's UPB	Age Gender
Castille, Buckner, and Thoroughgood (2016)	170 full-time employees recruited through MTurk	Machiavellianism*		Bottom-line Mentality Climate Perceptions	UPB	Age Gender Tenure
Chen, Chen, and Sheldon (2016)	183 U.S. based employees recruited through MTurk	Organizational Identification*	Moral Disengagement*	Inter-Organizational Competition*	UPB	
Kalshoven, Van Dijk, and Boon (2016)	156 employees from several Dutch organizations	Ethical Leadership	Organizational Identification*	Job Autonomy (low/high)*	UPB	Age Gender* Tenure*
Kong (2016)	120 U.S. employees from various industries recruited through StudyResponse.com	Obsessive Passion*	Organizational Identification*	Mindfulness*	UPB	Gender Position Tenure

Note. Significant variables are marked with \*.

Appendix B. Continued

Table A5 (Continued)

*UPB Studies Overview*

Authors	Sample	Independent Variable(s)	Mediator(s)	Moderator(s)	Dependent Variable(s)	Control Variable(s)
Tian and Peterson (2016)	354 full-time accountants recruited by MBA accounting and finance students in China	Ethical Pressure*	Ethical Beliefs in Support of the Company*	Power Distance*	UPB	Age Gender*
Lee, Schwarz, Newman, and Legood (2017)	Study 1 – 252 individuals from a manufacturing company in China Study 2 – 230 individuals from the U.K. recruited through a Qualtrics Panel	Psychological Entitlement	Moral Disengagement*  Status Striving*	Organizational Identification*	UPB	Age Gender Tenure

Note. Significant variables are marked with \*.

Appendix B. Continued

Table A6

*Major Findings of UPB Studies*

Authors	Findings
Umphress, Bingham, and Mitchell (2010)	In both studies, a moderated multiple regression analysis found a significant interaction (i.e., the positive organizational identification – UPB relationship was strengthened when positive reciprocity is high) while the organizational identification – UPB relationship was not significant. The control variables age and position were not found to be significant.
Matherne and Litchfield (2012)	A hierarchical regression analysis found support for the tested model. Interaction indicated a weakening in the positive relationship between affective commitment and UPB when moral identity was high. The control variables age, gender, hours worked, position, and tenure were not found to be significant.
Miao, Newman, Yu, and Xu (2013)	A hierarchical regression analysis found support for the tested model. Interaction indicated a strengthening in the curve-linear relationship between ethical leadership and UPB when subordinate identification with supervisor was high. Controlling for managerial position found that managers at higher managerial levels were more likely to engage in UPB. The control variable gender was not found to be significant.
Effelsberg, Solga, and Gurt (2014)	A moderated multiple regression analysis found support for the tested model. The moderation indicated a strengthening in the positive relationship between organizational identification and UPB when disposition towards unethical behavior was high. Controlling for age found that as age increased, the likeliness to engage in UPB decreased. The control variables age, gender, and tenure were not found to be significant.
Schutts and Shelley (2014)	<u>A path analysis indicated an indirect effect of organizational identification with UPB.</u>

Appendix B. Continued

Table A6 (Continued)

*Major Findings of UPB Studies*

Authors	Findings
Effelsberg and Solga (2015)	A multi-regression analysis indicated a significant positive relationship between leaders' organizational identification and follower-perceived transformational leadership while the positive relationship between follower-perceived transformational leadership and leaders' UPB was not significant. The control variable position was not found to be significant.
Graham, Ziegert, and Capitano (2015)	A 2-way ANOVA results supported the predictions for the interaction between leadership style and framing condition. Under gain framing, the levels of UPB did not differ between followers of the two types of leadership styles (transactional/transformational). Under loss framing, the levels of UPB for followers of transformational leaders was higher than the levels of UPB for followers of transactional leaders. Results of a hierarchical regression supported the predictions of the 3-way interaction among leadership styles, framing condition, and promotion focus. The interactive effects of leadership style and framing condition on UPB were not significantly distinct for individuals with high promotion focus. Under low promotion focus, willingness to commit UPB was higher for followers of transformational leaders than followers of transactional leaders when loss framing was used.
Verma and Mohapatra (2015)	Simple and multiple stepwise regression supported most of the hypothesized model, except for the identification of an insignificant positive relationship between organizational identification and UPB. Individual ethical ideology showed to significantly influence the relationship between organizational identification and UPB. The relationship was weakened when the individual's ideology focused on universal morals (idealism) and strengthened when the individual's ideology focused on personal values and perspectives (relativism).

Appendix B. Continued

Table A6 (Continued)

*Major Findings of UPB Studies*

Authors	Findings
Xiaocun (2015)	The hierarchical regression analysis confirmed all hypotheses. The test for moderation indicated that the positive relationship between colleagues' UPB and moral justification is significantly stronger when individuals exhibit high levels of organizational identification. The control variables age and gender were not found to be significant.
Castille, Buckner, and Thoroughgood (2016)	SEM was used to test the model. The test for a linear model indicated a significant positive relationship between Machiavellianism and UPB. The test for a moderated model did not indicate a significant interaction between Machiavellianism and bottom-line mentality climate perceptions. The control variables age, gender, and tenure were not found to be significant.
Chen, Chen, and Sheldon (2016)	An ANOVA was conducted, and findings supported the hypotheses. The test for moderation indicated that when inter-organizational competition is high, the positive relationship between organizational identification and moral disengagement is stronger for individuals with high organizational identification. When inter-organizational competition is low, the positive relationship between organizational identification and moral disengagement is similar between individuals with high or low organizational identification.
Kalshoven, Van Dijk, and Boon (2016)	A two-level regression indicated that the positive relationship between ethical leadership and UPB was not significant. A multi-level path analysis indicated that when job autonomy was low, the relationship between ethical leadership and UPB was positive and significant; while insignificant when job autonomy was high. When job autonomy was high, the relationship between ethical leadership and UPB was fully mediated by organizational identification. Significant control variables were gender and tenure while age was not found to be significant.

Appendix B. Continued

Table A6 (Continued)

*Major Findings of UPB Studies*

Authors	Findings
Kong (2016)	Hierarchical regression analyses supported the tested model. The test for moderation indicated that the relationship between obsessive passion and organizational identification was positive when mindfulness was low, but not significant and negative when mindfulness was high. The control variables gender, position, and tenure were not found to be significant.
Tian and Peterson (2016)	Mediated moderation was tested via three regression analyses. The relationship between ethical pressure and UPB was found to be partially mediated by ethical beliefs in support of the company. The test for moderation indicated that for high power distance the positive relationship between ethical pressure and ethical beliefs in support of the company was strengthened. Controlling for gender found that females were less likely to engage in UPB. A significant control variable was gender while age was not found to be significant.
Lee, Schwarz, Newman, and Legood (2017)	Study 1 established discriminant validity between UPB and counterproductive work behaviors (CWB) via CFA. Study 2 results indicated the full mediation through status striving and moral disengagement. Organizational identification was only marginally significant in strengthening the relationship between moral disengagement and UPB.

## Appendix C. Surveys

### Pilot

[https://uttyler.az1.qualtrics.com/jfe/preview/SV\\_8CijEirYZIgF1d3?Q\\_SurveyVersionID=current&Q\\_CHL=preview](https://uttyler.az1.qualtrics.com/jfe/preview/SV_8CijEirYZIgF1d3?Q_SurveyVersionID=current&Q_CHL=preview)

The University of Texas at Tyler  
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Are you currently living in the United States?

Yes  
 No

0%  100%

[>> NEXT](#)

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Are you a full-time or part-time employee?

part-time  
 full-time

0%  100%

[>> NEXT](#)

The University of Texas at Tyler  
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What is the third word in this question: "How many stars are in the American flag?"

50  
 STARS  
 13  


0%  100%

[>> NEXT](#)

## Appendix C. Continued

 The University of Texas at Tyler  
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**THE UNIVERSITY OF TEXAS AT TYLER**  
**Informed Consent (Online, Anonymous) to Participate in Research**  
**Institutional Review Board #Sp2018-102**  
**Approval Date: February 15, 2018**

You have been invited to participate in this study about employee perceptions towards their job and their organization. The purpose of this study is to measure your perceptions of your job and your organization. Your participation is completely voluntary, and if you begin participation and choose to not complete it, you are free to not continue without any adverse consequences.

If you agree to be in this study, are asked to do the following things:

- Confirm that you are at least 18 years of age.
- Confirm that you voluntarily agree to complete an online multiple choice survey.
- Be willing to take approximately 2-3 minutes to answer all questions honestly as there are no right or wrong answers.
- Selecting the button that best corresponds to your response after reading each question or statement.
- Scroll down the page to answer all the questions if needed and select NEXT to continue after each page.
- Complete the survey in one sitting.

There are no known risks to this study, other than becoming a little tired of answering the questions. If this happens, you are free to take a break and return to the survey to finish it, or, you can discontinue participation without any problems. Potential benefits to this study are: contributing to the research on employee perceptions towards their job and their organization.

You can be assured that all your provided responses to the questions are anonymous. If you need to ask questions about this study, you can contact the principal researcher, Julia Berrios, or, if you have any questions about your rights as a research participant, you can contact Dr. Gloria Duke, Chair of the UT Tyler Institutional Review Board at gduke@uttyler, or 903-566-7023.

I have read and understood what has been explained to me. If I choose to participate in this study, I will click "Yes" in the box below and proceed to the survey. If I choose to not participate, I will click "No" in the box.

Yes, I choose to participate in this study  
 No, I choose to not participate in this study.

0%  100%

**>> NEXT**

## Appendix C. Continued

 The University of Texas at Tyler  
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The following statements are about your feelings about your organization. Please read each statement carefully and indicate how much you agree with each statement. Please be honest as there are no right or wrong answers. Often, the best approach is to select the first response that comes to your mind.

	strongly disagree	disagree	neutral	agree	strongly agree
The organization is a very personal place. It is like an extended family. People seem to share a lot of themselves.	<input type="radio"/>				
The organization is a very dynamic and entrepreneurial place. People are willing to stick their necks out and take risks.	<input type="radio"/>				
The organization is a very results-oriented. A major concern is with getting the job done. People are very competitive and achievement oriented.	<input type="radio"/>				
The organization is a very controlled and structured place. Formal procedures generally govern what people do.	<input type="radio"/>				
	strongly disagree	disagree	neutral	agree	strongly agree
The leadership in the organization is generally considered to exemplify mentoring, facilitating, or nurturing.	<input type="radio"/>				
The leadership in the organization is generally considered to exemplify entrepreneurship, innovating, or risk taking.	<input type="radio"/>				
The leadership in the organization is generally considered to exemplify a nonsense, aggressive, results-oriented focus.	<input type="radio"/>				
The leadership in the organization is generally considered to exemplify coordinating, organizing, or smooth-running efficiency.	<input type="radio"/>				
	strongly disagree	disagree	neutral	agree	strongly agree
The management style in the organization is characterized by teamwork, consensus, and participation.	<input type="radio"/>				
The management style in the organization is characterized by individual risk-taking, innovation, freedom, and uniqueness.	<input type="radio"/>				
The management style in the organization is characterized by hard-driving competitiveness, high demands, and achievement.	<input type="radio"/>				
The management style in the organization is characterized by security of employment, conformity, predictability, and stability in relationships.	<input type="radio"/>				

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[>> NEXT](#)

## Appendix C. Continued



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Please click on the little blue circle at the bottom of the screen.  
Do not click on the scale items that are labeled from 1 to 7.

This is just to screen out  
random checking

Strongly Disagree |       | Strongly Agree

[Blue circular button]

0%  100%

[>> NEXT]

## Appendix C. Continued

**The University of Texas at Tyler**  
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The following statements are about your feelings about your organization. Please read each statement carefully and indicate how much you agree with each statement. Please be honest as there are no right or wrong answers. Often, the best approach is to select the first response that comes to your mind.

	strongly disagree	disagree	neutral	agree	strongly agree
The glue that holds the organization together is loyalty and mutual trust. Commitment to this organization runs high.	<input type="radio"/>				
The glue that holds the organization together is commitment to innovation and development. There is an emphasis on being on the cutting edge.	<input type="radio"/>				
The glue that holds the organization together is the emphasis on achievement and goal accomplishment. Aggressiveness and winning are common themes.	<input type="radio"/>				
The glue that holds the organization together is formal rules and policies. Maintaining a smooth-running organization is important.	<input type="radio"/>				
	strongly disagree	disagree	neutral	agree	strongly agree
The organization emphasizes human development. High trust, openness, and participation persist.	<input type="radio"/>				
The organization emphasizes acquiring new resources and creating new challenges. Trying new things and prospecting for opportunities are valued.	<input type="radio"/>				
The organization emphasizes competitive actions and achievement. Hitting stretch targets and winning in the marketplace are dominant.	<input type="radio"/>				
The organization emphasizes permanence and stability. Efficiency, control, and smooth operations are important.	<input type="radio"/>				
	strongly disagree	disagree	neutral	agree	strongly agree
The organization defines success on the basis of the development of human resources, teamwork, employee commitment, and concern for people.	<input type="radio"/>				
The organization defines success on the basis of having the most unique or newest products. It is a product leader and innovator.	<input type="radio"/>				
The organization defines success on the basis of winning in the marketplace and outpacing the competition. Competitive market leadership is key.	<input type="radio"/>				
The organization defines success on the basis of efficiency. Dependable delivery, smooth scheduling, and low-cost production are critical.	<input type="radio"/>				

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0%  100%

[>> NEXT](#)

## Appendix C. Continued

 The University of Texas at Tyler  
TYLER

Please answer the following general questions about yourself. Remember, none of this information is tied to your identity.

What is your gender?

Male  
 Female

What is your age?

18 to 25 years  
 26 to 54 years  
 55 years and older

Which best describes your race/ethnicity?

African American or Black  
 American Indian/Other Native American  
 Asian or Pacific Islander  
 Caucasian or White (other than Hispanic)  
 Hispanic  
 Other

What is your highest level of education you have completed?

Less than high school  
 High school graduate or equivalent (e.g., GED)  
 Some college credit but no degree  
 2-year degree: Associate's degree (e.g., AA, AS)  
 4 year degree: Bachelor's degree (e.g., BA, BS, BBA)  
 Master's/Professional degree (e.g., MBA, MEd, MD, JD)  
 Doctorate (e.g., PhD, Ed D)

Choose one of the following **industries** that most accurately describes the type of work your company operates in, regardless of your actual job position. Please read through all choices carefully.

For more information about any specific industry, choose an industry from the drop-down menu on the O\*NET website: <https://www.onetonline.org/find/>

*Industries - broad groups of businesses or organizations with similar activities, products, or services.*  
Occupations are considered part of an industry based on their employment (<https://www.onetonline.org/find/>).

Accommodation and Food Services  
 Administrative and Support Services  
 Agriculture, Forestry, Fishing, and Hunting  
 Arts, Entertainment, and Recreation  
 Construction  
 Educational Services  
 Finance and Insurance  
 Government  
 Health Care and Social Assistance  
 Information (including Information Technology)  
 Management of Companies and Enterprises  
 Manufacturing  
 Mining, Quarrying, and Oil and Gas Extraction  
 Other Services (except Public Administration)  
 Professional, Scientific, and Technical Services  
 Real Estate and Rental and Leasing  
 Retail Trade  
 Transportation and Warehousing  
 Utilities  
 Wholesale Trade

## Appendix C. Continued

What is the size of the company in terms of the number of employees?

fewer than 100 employees  
 101-1,000 employees  
 more than 1,000 employees

What is the age of the company?

Less than 1 year  
 1-4 years  
 5-9 years  
 10 years and older

How long have you worked at your company?

Less than 1 year  
 1-3 years  
 3-5 years  
 5-7 years  
 More than 7 years

Do you manage or supervise people?

Yes  
 No

0% 100%

[>> NEXT](#)



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Your response has been recorded. Thank you for your time and participation. Please copy and paste the following code into the MTurk HIT to receive payment.  
**R\_2U3DFT5tq7QFRXX**

0% 100%

**Describe your HIT to Workers**

**Title** Answer a 2-3 minute multiple-choice survey about you and your work environment

Describe the task to Workers. Be as specific as possible, e.g. "answer a survey about movies", instead of "short survey", so Workers know what to expect.

**Description** Give us some general information about you, your job, and your organization

Give more detail about this task. This gives Workers a bit more information before they decide to view your HIT.

**Keywords** survey, organization, job, work environment, di

Provide keywords that will help Workers search for your HITs.

## Appendix C. Continued

**Worker requirements**

Require that Workers be Masters to do your HITs (Who are Mechanical Turk Masters?)

Yes  No

Specify any additional qualifications Workers must meet to work on your HITs:

Location is UNITED STATES (US) [Remove](#)

Employment Status - Full time (35+ hours per week) is True [Remove](#)

HIT Approval Rate (%) for all Requesters' HITs is greater than 95 [Remove](#)

[\(+ Add another criterion](#) (up to 2 more)

(Premium Qualifications incur additional fees, see [Pricing Details](#) to learn more)

Project contains adult content ([See details](#))

This project may contain potentially explicit or offensive content, for example, nudity.

HIT Visibility ([What is HIT visibility?](#))

Public - All Workers can see and preview my HITs

Private - All Workers can see my HITs, but only Workers that meet all Qualification requirements can preview my HITs

Hidden - Only Workers that meet my HIT Qualification requirements can see and preview my HITs

**Survey Link Instructions** (Click to expand)

We are conducting an academic survey about your perceptions of your workplace. We need to understand your opinions and feelings about your organization. The quality of the data we receive is extremely important to us. To ensure quality, we have placed attention checks in the survey. Please read each question carefully. Participants who fail attention checks will not be paid.

Select the link below to complete the survey. After passing two pre-screening questions to ensure you fit the population criteria we are looking for, you will be directed to the 2-3 minute survey. At the end of the survey, you will receive a code to paste into the box below to receive credit for taking our survey.

**Make sure to leave this window open as you complete the survey.** When you are finished, you will return to this page to paste the code into the box.

**Survey link:**  
[https://uttyler.az1.qualtrics.com/jfe/form/SV\\_8CijEirYZIgF1d3](https://uttyler.az1.qualtrics.com/jfe/form/SV_8CijEirYZIgF1d3)

**Provide the survey code here:**  
e.g. 123456

Appendix C. Continued

Main Study – Survey 1

[https://uttyler.az1.qualtrics.com/jfe/preview/SV\\_dopyGPcn10D5vFP?Q\\_SurveyVersionI](https://uttyler.az1.qualtrics.com/jfe/preview/SV_dopyGPcn10D5vFP?Q_SurveyVersionI)

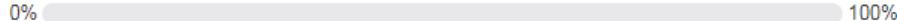
D=current&Q\_CHL=preview

The University of Texas at  
**TYLER**

Are you currently living in the United States?

No  
 Yes

>> NEXT

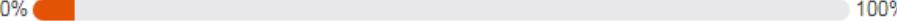
0%  100%

The University of Texas at  
**TYLER**

Are you a full-time or part-time employee?

part-time  
 full-time

>> NEXT

0%  100%

The University of Texas at  
**TYLER**

What is the third word in this question: "How many stars are in the American flag?"

- 50**
- STARS**



[>> NEXT](#)



## Appendix C. Continued

**The University of Texas at  
TYLER**

THE UNIVERSITY OF TEXAS AT TYLER  
Informed Consent (Online, Anonymous) to Participate in Research  
Institutional Review Board #Sp2018-138  
Approval Date: May 8, 2018

You have been invited to participate in this study about employee perceptions towards their job and their organization. The purpose of this study is to measure your perceptions of your job and your organization. Your participation is completely voluntary, and if you begin participation and choose to not complete it, you are free to not continue without any adverse consequences.

If you agree to be in this study, are asked to do the following things:

- Confirm that you are at least 18 years of age.
- Confirm that you voluntarily agree to complete an online multiple choice survey.
- Be willing to take approximately 2-3 minutes to answer all questions honestly as there are no right or wrong answers.
- Selecting the button that best corresponds to your response after reading each question or statement.
- Scroll down the page to answer all the questions if needed and select NEXT to continue after each page.
- Complete the survey in one sitting.

There are no known risks to this study, other than becoming a little tired of answering the questions. If this happens, you are free to take a break and return to the survey to finish it, or, you can discontinue participation without any problems. Potential benefits to this study are: contributing to the research on employee perceptions towards their job and their organization.

You can be assured that all your provided responses to the questions are anonymous. If you need to ask questions about this study, you can contact the principal researcher, Julia Berrios, or, if you have any questions about your rights as a research participant, you can contact Dr. Gloria Duke, Chair of the UT Tyler Institutional Review Board at gduke@uttyler, or 903-566-7023.

I have read and understood what has been explained to me. If I choose to participate in this study, I will click "Yes" in the box below and proceed to the survey. If I choose to not participate, I will click "No" in the box.

Yes, I choose to participate in this study  
 No, I choose to not participate in this study

**>> NEXT**

0%  100%

## Appendix C. Continued

The University of Texas at  
**TYLER**

Please answer the following general questions about yourself. Remember, none of this information is tied to your identity and all answers are confidential and anonymous.

What is your gender?

Male  
 Female

What is your age?

18 to 24 years  
 25 to 54 years  
 55 years and older

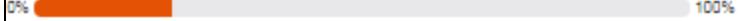
Which best describes your race/ethnicity?

African American or Black  
 American Indian/Other Native American  
 Asian or Pacific Islander  
 Caucasian or White (other than Hispanic)  
 Hispanic  
 Other

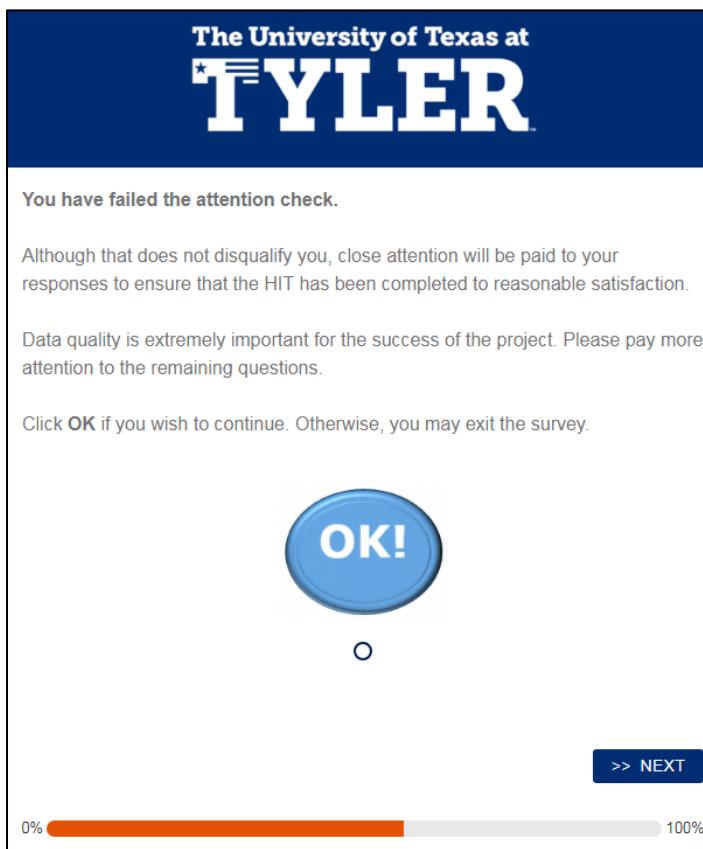
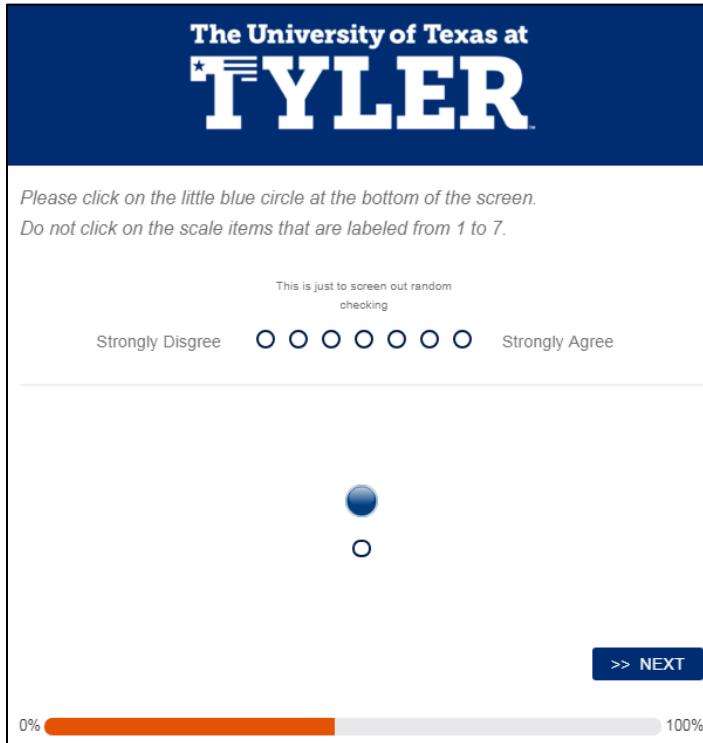
What is your highest level of education you have completed?

Less than high school  
 High school graduate or equivalent (e.g., GED)  
 Some college credit but no degree  
 2-year degree: Associate's degree (e.g., AA, AS)  
 4 year degree: Bachelor's degree (e.g., BA, BS, BBA)  
 Master's/Professional degree (e.g., MBA, MEd, MD, JD)  
 Doctorate (e.g., PhD, EdD)

**>> NEXT**

0%  100%

## Appendix C. Continued



## Appendix C. Continued

The University of Texas at  
**TYLER**

Please answer the following general questions about your work environment. Remember, none of this information is tied to your identity and all answers are confidential and anonymous.

What best describes the industry sector that you work in?

Goods-producing, excluding agriculture  
 Service-providing  
 Agriculture, forestry, fishing, and hunting

What is the size of the company in terms of the number of employees?

1-499 employees  
 500 or more employees

What is the age of the company?

Less than 1 year  
 1-4 years  
 5-9 years  
 10 years and older

How many years have you worked at your company? Please select 0, if you have worked less than a year at your company.

0      5      10      15      20      25      30      35

Years

Do you manage or supervise people?

Yes  
 No

**>> NEXT**

0%  100%

## Appendix C. Continued



Your response has been recorded. Thank you for your time and participation. Please copy and paste the following code into the MTurk HIT to receive payment.

R\_8jGUiIdd9hhWKDAZ

0%  100%

**Project Name:** Main Study - Part 1 This name is not displayed to Workers.

**Describe your HIT to Workers**

**Title** Answer a 1-2 minute multiple-choice survey about you and your work environment

Describe the task to Workers. Be as specific as possible, e.g. "answer a survey about movies", instead of "short survey", so Workers know what to expect.

**Description** Give us some general information about you, your job, and your organization

Give more detail about this task. This gives Workers a bit more information before they decide to view your HIT.

**Keywords** survey, organization, job, work environment, d

Provide keywords that will help Workers search for your HITs.

## Appendix C. Continued

**Setting up your HIT**

Reward per assignment	\$ 0.10
This is how much a Worker will be paid for completing an assignment. Consider how long it will take a Worker to complete each assignment.	
Number of assignments per HIT	500
How many unique Workers do you want to work on each HIT?	
Time allotted per assignment	10 Minutes
Maximum time a Worker has to work on a single task. Be generous so that Workers are not rushed.	
HIT expires in	7 Days
Maximum time your HIT will be available to Workers on Mechanical Turk.	
Auto-approve and pay Workers in	10 Days
This is the amount of time you have to reject a Worker's assignment after they submit the assignment.	

**Worker requirements**

Require that Workers be Masters to do your HITs ([Who are Mechanical Turk Masters?](#))

Yes  No

Specify any additional qualifications Workers must meet to work on your HITs:

Location	is	UNITED STATES (US)	Remove
Employment Status - Full time (35+ hours per week)	True	Remove	
HIT Approval Rate (%) for all Requesters' HITs	greater than	95	Remove

[\(+ Add another criterion](#) (up to 2 more)  
(Premium Qualifications incur additional fees, see [Pricing Details](#) to learn more)

**Project contains adult content** ([See details](#))  
 This project may contain potentially explicit or offensive content, for example, nudity.

**HIT Visibility** ([What is HIT visibility?](#))  
 Public - All Workers can see and preview my HITs  
 Private - All Workers can see my HITs, but only Workers that meet all Qualification requirements can preview my HITs  
 Hidden - Only Workers that meet my HIT Qualification requirements can see and preview my HITs

**Survey Link Instructions** (Click to expand)

We are conducting an academic survey about your perceptions of your workplace. We need to understand your opinions and feelings about your organization. The quality of the data we receive is extremely important to us. To ensure quality, we have placed attention checks in the survey. Please read each question carefully. Participants who fail attention checks will not be paid.

This is a three-part survey. If you meet the requirement, you will be contacted with the request for a follow-up survey.

Select the link below to complete the survey. After passing two pre-screening questions to ensure you fit the population criteria we are looking for, you will be directed to the 1-2 minute survey. At the end of the survey, you will receive a code to paste into the box below to receive credit for taking our survey.

**Make sure to leave this window open as you complete the survey.** When you are finished, you will return to this page to paste the code into the box.

---

Survey link:	<a href="https://uttyler.az1.qualtrics.com/jfe/form/SV_dopyGPcn10D5vFP">https://uttyler.az1.qualtrics.com/jfe/form/SV_dopyGPcn10D5vFP</a>
Provide the survey code here:	<input type="text" value="e.g. 123456"/>

Appendix C. Continued

Main Study – Survey 2

[https://uttyler.az1.qualtrics.com/jfe/preview/SV\\_a5h9vtKWREsq7OZ?Q\\_SurveyVersionI](https://uttyler.az1.qualtrics.com/jfe/preview/SV_a5h9vtKWREsq7OZ?Q_SurveyVersionI)

D=current&Q\_CHL=preview

The University of Texas at  
**TYLER**

What is the third word in this question: "How many stars are in the American flag?"

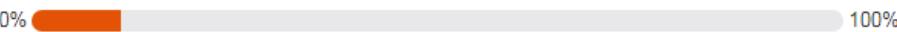
50

STARS



13

>> NEXT

0%  100%

## Appendix C. Continued

**The University of Texas at  
TYLER**

THE UNIVERSITY OF TEXAS AT TYLER  
Informed Consent (Online, Anonymous) to Participate in Research  
Institutional Review Board #Sp2018-138  
Approval Date: May 8, 2018

You have been invited to participate in this study about employee perceptions towards their job and their organization. The purpose of this study is to measure your perceptions of your job and your organization. Your participation is completely voluntary, and if you begin participation and choose to not complete it, you are free to not continue without any adverse consequences.

If you agree to be in this study, are asked to do the following things:

- Confirm that you are at least 18 years of age.
- Confirm that you voluntarily agree to complete an online multiple choice survey.
- Be willing to take approximately 2-3 minutes to answer all questions honestly as there are no right or wrong answers.
- Selecting the button that best corresponds to your response after reading each question or statement.
- Scroll down the page to answer all the questions if needed and select NEXT to continue after each page.
- Complete the survey in one sitting.

There are no known risks to this study, other than becoming a little tired of answering the questions. If this happens, you are free to take a break and return to the survey to finish it, or, you can discontinue participation without any problems. Potential benefits to this study are: contributing to the research on employee perceptions towards their job and their organization.

You can be assured that all your provided responses to the questions are anonymous. If you need to ask questions about this study, you can contact the principal researcher, Julia Berrios, or, if you have any questions about your rights as a research participant, you can contact Dr. Gloria Duke, Chair of the UT Tyler Institutional Review Board at gduke@uttyler, or 903-566-7023.

I have read and understood what has been explained to me. If I choose to participate in this study, I will click "Yes" in the box below and proceed to the survey. If I choose to not participate, I will click "No" in the box.

Yes, I choose to participate in this study  
 No, I choose to not participate in this study

**>> NEXT**

0%  100%

## Appendix C. Continued

The University of Texas at <b>TYLER</b>							
The following statements are about your feelings about your organization. Please read each statement carefully and indicate how much you agree with each statement. Please be honest as there are no right or wrong answers. Often, the best approach is to select the first response that comes to your mind.							
	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
If it would help my organization, I would misrepresent the truth to make my organization look good.	<input type="radio"/>						
If it would help my organization, I would exaggerate the truth about my company's products or services to customers and clients.	<input type="radio"/>						
If it would benefit my organization, I would withhold negative information about my company or its products from customers and clients.	<input type="radio"/>						

## Appendix C. Continued

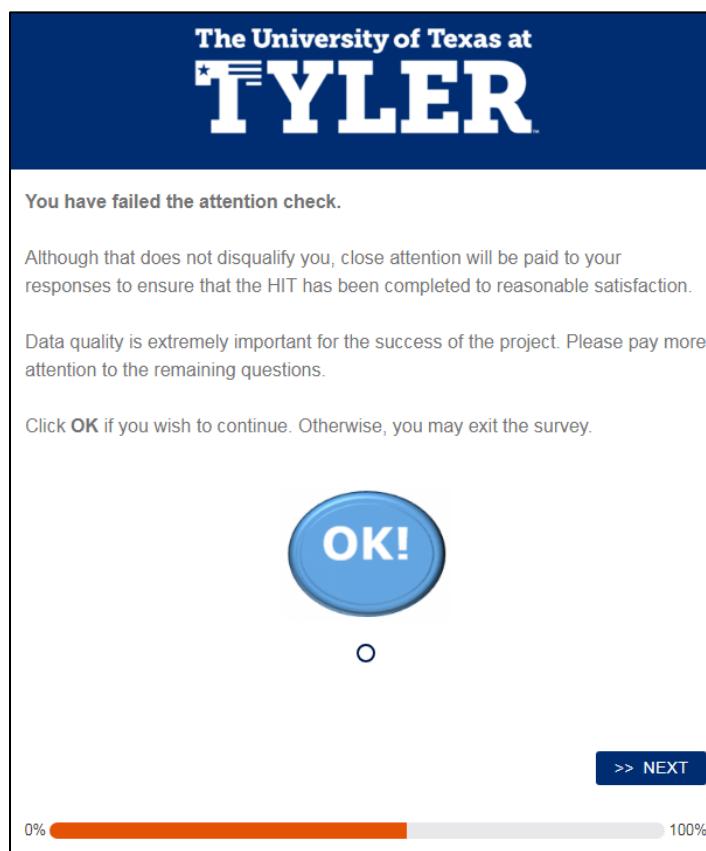
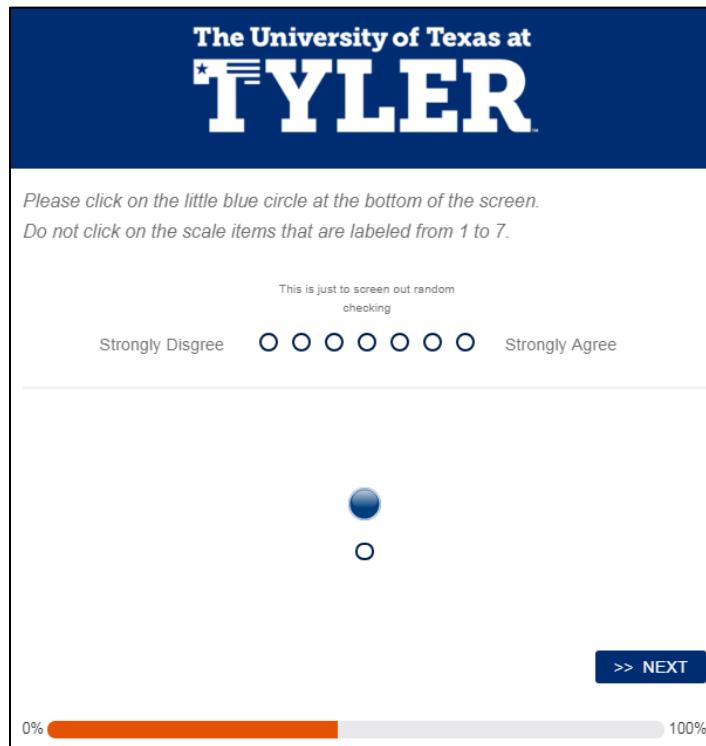
	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
If my organization needed me to, I would give a good recommendation on the behalf of an incompetent employee in the hope that the person will become another organization's problem instead of my own.	<input type="radio"/>						
	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
If my organization needed me to, I would withhold issuing a refund to a customer or client accidentally overcharged.	<input type="radio"/>						
	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
If needed, I would conceal information from the public that could be damaging to my organization.	<input type="radio"/>						

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>> NEXT

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## Appendix C. Continued



## Appendix C. Continued

<b>The University of Texas at TYLER</b>					
<p>The following statements are about your feelings about your organization. Please read each statement carefully and indicate how much you agree with each statement. Please be honest as there are no right or wrong answers. Often, the best approach is to select the first response that comes to your mind.</p>					
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<p>The organization is a very personal place. It is like an extended family. People seem to share a lot of themselves.</p>	<input type="radio"/>				
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<p>The organization is a very dynamic and entrepreneurial place. People are willing to stick their necks out and take risks.</p>	<input type="radio"/>				
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<p>The organization is a very results-oriented. A major concern is with getting the job done. People are very competitive and achievement oriented.</p>	<input type="radio"/>				
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<p>The organization is a very controlled and structured place. Formal procedures generally govern what people do.</p>	<input type="radio"/>				
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<p>The leadership in the organization is generally considered to exemplify mentoring, facilitating, or nurturing.</p>	<input type="radio"/>				
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<p>The leadership in the organization is generally considered to exemplify entrepreneurship, innovating, or risk taking.</p>	<input type="radio"/>				

## Appendix C. Continued

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The leadership in the organization is generally considered to exemplify a no-nonsense, aggressive, results-oriented focus.	<input type="radio"/>				
The leadership in the organization is generally considered to exemplify coordinating, organizing, or smooth-running efficiency.	<input type="radio"/>				
The management style in the organization is characterized by teamwork, consensus, and participation.	<input type="radio"/>				
The management style in the organization is characterized by individual risk-taking, innovation, freedom, and uniqueness.	<input type="radio"/>				
The management style in the organization is characterized by hard-driving competitiveness, high demands, and achievement.	<input type="radio"/>				
The management style in the organization is characterized by security of employment, conformity, predictability, and stability in relationships.	<input type="radio"/>				
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<a href="#" style="color: blue; text-decoration: none;">&gt;&gt; NEXT</a>					

## Appendix C. Continued

The University of Texas at <b>TYLER</b>					
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The glue that holds the organization together is loyalty and mutual trust. Commitment to this organization runs high.	<input type="radio"/>				
The glue that holds the organization together is commitment to innovation and development. There is an emphasis on being on the cutting edge.	<input type="radio"/>				
The glue that holds the organization together is the emphasis on achievement and goal accomplishment. Aggressiveness and winning are common themes.	<input type="radio"/>				
The glue that holds the organization together is formal rules and policies. Maintaining a smooth-running organization is important.	<input type="radio"/>				
The organization emphasizes human development. High trust, openness, and participation persist.	<input type="radio"/>				
The organization emphasizes acquiring new resources and creating new challenges. Trying new things and prospecting for opportunities are valued.	<input type="radio"/>				

## Appendix C. Continued

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The organization emphasizes competitive actions and achievement. Hitting stretch targets and winning in the marketplace are dominant.	<input type="radio"/>				
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The organization emphasizes permanence and stability. Efficiency, control, and smooth operations are important.	<input type="radio"/>				
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The organization defines success on the basis of the development of human resources, teamwork, employee commitment, and concern for people.	<input type="radio"/>				
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The organization defines success on the basis of having the most unique or newest products. It is a product leader and innovator.	<input type="radio"/>				
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The organization defines success on the basis of winning in the marketplace and outpacing the competition. Competitive market leadership is key.	<input type="radio"/>				
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The organization defines success on the basis of efficiency. Dependable delivery, smooth scheduling, and low-cost production are critical.	<input type="radio"/>				

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>> NEXT

0% 100%

## Appendix C. Continued

The University of Texas at  
**TYLER**

We are interested in whether you actually take the time to read the directions. So, in order to demonstrate that you have read the instructions, please ignore the answer choices below and simply click on the NEXT button.

What is your favorite color?

blue  
 black  
 yellow  
 pink  
 other

>> NEXT

0%  100%

The University of Texas at  
**TYLER**

You have failed the attention check.

Although that does not disqualify you, close attention will be paid to your responses to ensure that the HIT has been completed to reasonable satisfaction.

Data quality is extremely important for the success of the project. Please pay more attention to the remaining questions.

Click **OK** if you wish to continue. Otherwise, you may exit the survey.

**OK!**

○

>> NEXT

0%  100%

## Appendix C. Continued

**The University of Texas at  
TYLER**

The following statements are about your feelings about your organization. Please read each statement carefully and indicate how much you agree with each statement. Please be honest as there are no right or wrong answers. Often, the best approach is to select the first response that comes to your mind.

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
I would be very happy to spend the rest of my career with this organization.	<input type="radio"/>						
I really feel as if this organization's problems are my own.	<input type="radio"/>						
I do not feel like "part of the family" at my organization.	<input type="radio"/>						
I do not feel "emotionally attached" to this organization.	<input type="radio"/>						
This organization has a great deal of personal meaning for me.	<input type="radio"/>						
I do not feel a strong sense of belonging to my organization.	<input type="radio"/>						

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**>> NEXT**

0%  100%

## Appendix C. Continued

**The University of Texas at  
TYLER**

The following statements are about your feelings about your organization. Please read each statement carefully and indicate how much you agree with each statement. Please be honest as there are no right or wrong answers. Often, the best approach is to select the first response that comes to your mind.

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
I am willing to put in a great deal of effort beyond that normally expected in order to help this organization be successful.	<input type="radio"/>						
I talk up this organization to my friends as a great organization to work for.	<input type="radio"/>						
I would accept almost any types of job assignment in order to keep working for this organization.	<input type="radio"/>						
I find that my values and the organization's values are very similar.	<input type="radio"/>						

## Appendix C. Continued

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
I am proud to tell others that I am part of this organization.	<input type="radio"/>						
	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
This organization really inspires the very best in me in the way of job performance.	<input type="radio"/>						
	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
I am extremely glad that I chose this organization to work for over others I was considering at the time I joined.	<input type="radio"/>						
	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
I really care about the fate of this organization.	<input type="radio"/>						
	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
For me, this is the best of all possible organizations for which to work.	<input type="radio"/>						

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>> NEXT

0% 100%

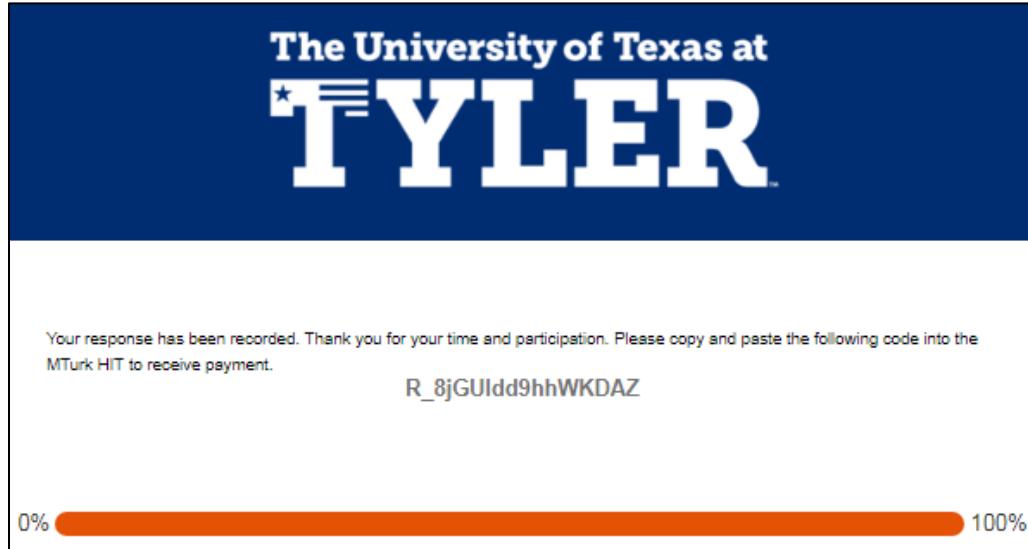
## Appendix C. Continued

The University of Texas at <b>TYLER</b>					
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I sometimes tell lies if I have to.	<input type="radio"/>				
I never cover up my mistakes.	<input type="radio"/>				
I always obey laws, even if I am unlikely to get caught.	<input type="radio"/>				
I have said something bad about a friend behind his or her back.	<input type="radio"/>				
When I hear people talking privately, I avoid listening.	<input type="radio"/>				

## Appendix C. Continued

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I have received too much change from a salesperson without telling him or her.	<input type="radio"/>				
When I was young I sometimes stole things.	<input type="radio"/>				
I have done things that I don't tell other people about.	<input type="radio"/>				
I never take things that don't belong to me.	<input type="radio"/>				
I don't gossip about other people's business.	<input type="radio"/>				
© 1991 Glencoe. All rights reserved. Do not duplicate.					
<a href="#" style="color: white; background-color: #005a99; padding: 5px 10px; text-decoration: none; font-weight: bold;">&gt;&gt; NEXT</a>					
<span style="background-color: #ff7f0e; color: white; padding: 2px 10px; border-radius: 10px;">0%</span> <span style="margin: 0 10px;"> </span> <span style="background-color: #cccccc; color: black; padding: 2px 10px; border-radius: 10px;">100%</span>					

## Appendix C. Continued



### Describe your HIT to Workers

**Title** Answer a 3-5 minute multiple-choice survey about you and your work environment

Describe the task to Workers. Be as specific as possible, e.g. "answer a survey about movies", instead of "short survey", so Workers know what to expect.

**Description** Give us some general information about you, your job, and your organization

Give more detail about this task. This gives Workers a bit more information before they decide to view your HIT.

**Keywords** survey, organization, job, work environment, d

Provide keywords that will help Workers search for your HITs.

### Setting up your HIT

**Reward per assignment** \$ 0.5

This is how much a Worker will be paid for completing an assignment. Consider how long it will take a Worker to complete each assignment.

**Number of assignments per HIT** 500

How many unique Workers do you want to work on each HIT?

**Time allotted per assignment** 20 Minutes

Maximum time a Worker has to work on a single task. Be generous so that Workers are not rushed.

**HIT expires in** 7 Days

Maximum time your HIT will be available to Workers on Mechanical Turk.

**Auto-approve and pay Workers in** 10 Days

This is the amount of time you have to reject a Worker's assignment after they submit the assignment.

## Appendix C. Continued

**Worker requirements**

Require that Workers be Masters to do your HITs ([Who are Mechanical Turk Masters?](#))

Yes  No

Specify any additional qualifications Workers must meet to work on your HITs:

Completed T1 ▾ equal to ▾ 3 ▾ [Remove](#)

[\(+\)](#) Add another criterion (up to 4 more)  
(Premium Qualifications incur additional fees, see [Pricing Details](#) to learn more)

Project contains adult content ([See details](#))  
 This project may contain potentially explicit or offensive content, for example, nudity.

HIT Visibility ([What is HIT visibility?](#))

Public - All Workers can see and preview my HITs  
 Private - All Workers can see my HITs, but only Workers that meet all Qualification requirements can preview my HITs  
 Hidden - Only Workers that meet my HIT Qualification requirements can see and preview my HITs

**Survey Link Instructions** (Click to expand)

We are conducting an academic survey about your perceptions of your workplace. We need to understand your opinions and feelings about your organization. The quality of the data we receive is extremely important to us. To ensure quality, we have placed attention checks in the survey. Please read each question carefully. Participants who fail attention checks will not be paid.

This is the second part of a three-part survey. After you complete this survey, you will be contacted with the request for a third survey.

Select the link below to complete the survey. After passing a pre-screening question and consenting to take this survey, you will be directed to the 3-5 minute survey. At the end of the survey, you will receive a code to paste into the box below to receive credit for taking our survey.

Make sure to leave this window open as you complete the survey. When you are finished, you will return to this page to paste the code into the box.

Survey link:  
[https://utility.az1.qualtrics.com/jfe/form/SV\\_a5h9tKWRsq7OZ](https://utility.az1.qualtrics.com/jfe/form/SV_a5h9tKWRsq7OZ)

Provide the survey code here:  
e.g. 123456

Appendix C. Continued

Main Study – Survey 3

[https://uttyler.az1.qualtrics.com/jfe/preview/SV\\_0xFjofhxIQu9PWR?Q\\_SurveyVersionI](https://uttyler.az1.qualtrics.com/jfe/preview/SV_0xFjofhxIQu9PWR?Q_SurveyVersionI)

D=current&Q\_CHL=preview

The University of Texas at  
**TYLER**

What is the third word in this question: "How many stars are in the American flag?"

50

STARS



13

[>> NEXT](#)

0%  100%

## Appendix C. Continued

**The University of Texas at  
TYLER**

THE UNIVERSITY OF TEXAS AT TYLER  
Informed Consent (Online, Anonymous) to Participate in Research  
Institutional Review Board #Sp2018-138  
Approval Date: May 8, 2018

You have been invited to participate in this study about employee perceptions towards their job and their organization. The purpose of this study is to measure your perceptions of your job and your organization. Your participation is completely voluntary, and if you begin participation and choose to not complete it, you are free to not continue without any adverse consequences.

If you agree to be in this study, are asked to do the following things:

- Confirm that you are at least 18 years of age.
- Confirm that you voluntarily agree to complete an online multiple choice survey.
- Be willing to take approximately 2-3 minutes to answer all questions honestly as there are no right or wrong answers.
- Selecting the button that best corresponds to your response after reading each question or statement.
- Scroll down the page to answer all the questions if needed and select NEXT to continue after each page.
- Complete the survey in one sitting.

There are no known risks to this study, other than becoming a little tired of answering the questions. If this happens, you are free to take a break and return to the survey to finish it, or, you can discontinue participation without any problems. Potential benefits to this study are: contributing to the research on employee perceptions towards their job and their organization.

You can be assured that all your provided responses to the questions are anonymous. If you need to ask questions about this study, you can contact the principal researcher, Julia Berrios, or, if you have any questions about your rights as a research participant, you can contact Dr. Gloria Duke, Chair of the UT Tyler Institutional Review Board at gduke@uttyler, or 903-566-7023.

I have read and understood what has been explained to me. If I choose to participate in this study, I will click "Yes" in the box below and proceed to the survey. If I choose to not participate, I will click "No" in the box.

Yes, I choose to participate in this study  
 No, I choose to not participate in this study

**>> NEXT**

0%  100%

## Appendix C. Continued

**The University of Texas at  
TYLER**

The following statements are about your feelings about your organization. Please read each statement carefully and indicate how much you agree with each statement. Please be honest as there are no right or wrong answers. Often, the best approach is to select the first response that comes to your mind.

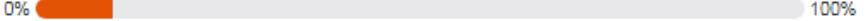
	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
If it would help my organization, I would misrepresent the truth to make my organization look good.	<input type="radio"/>						
If it would help my organization, I would exaggerate the truth about my company's products or services to customers and clients.	<input type="radio"/>						
If it would benefit my organization, I would withhold negative information about my company or its products from customers and clients.	<input type="radio"/>						

## Appendix C. Continued

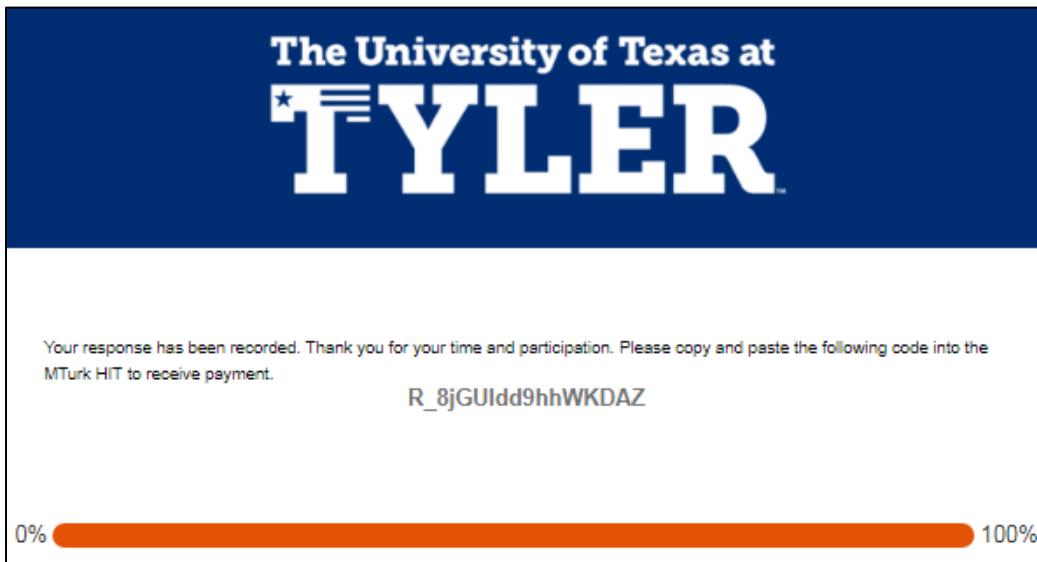
	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
If my organization needed me to, I would give a good recommendation on the behalf of an incompetent employee in the hope that the person will become another organization's problem instead of my own.	<input type="radio"/>						
If my organization needed me to, I would withhold issuing a refund to a customer or client accidentally overcharged.	<input type="radio"/>						
If needed, I would conceal information from the public that could be damaging to my organization.	<input type="radio"/>						

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[>> NEXT](#)

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## Appendix C. Continued



Describe your HIT to Workers	
Title	Answer a 1-2 minute multiple-choice survey about you and your work environment.
Description	Describe the task to Workers. Be as specific as possible, e.g. "answer a survey about movies", instead of "short survey", so Workers know what to expect.  Give us some general information about you, your job, and your organization
Keywords	survey, organization, job, work environment, d  Provide keywords that will help Workers search for your HITs.

## Appendix C. Continued

**Setting up your HIT**

Reward per assignment	\$ 0.25
This is how much a Worker will be paid for completing an assignment. Consider how long it will take a Worker to complete each assignment.	
Number of assignments per HIT	500
How many unique Workers do you want to work on each HIT?	
Time allotted per assignment	10 Minutes
Maximum time a Worker has to work on a single task. Be generous so that Workers are not rushed.	
HIT expires in	7 Days
Maximum time your HIT will be available to Workers on Mechanical Turk.	
Auto-approve and pay Workers in	10 Days
This is the amount of time you have to reject a Worker's assignment after they submit the assignment.	

**Worker requirements**

Require that Workers be Masters to do your HITs ( <a href="#">Who are Mechanical Turk Masters?</a> )		
<input type="radio"/> Yes	<input checked="" type="radio"/> No	
Specify any additional qualifications Workers must meet to work on your HITs:		
Completed T2	equal to	20
<a href="#">(+ Add another criterion</a> (up to 4 more)		
(Premium Qualifications incur additional fees, see <a href="#">Pricing Details</a> to learn more)		
Project contains adult content ( <a href="#">See details</a> )		
<input type="checkbox"/> This project may contain potentially explicit or offensive content, for example, nudity.		
HIT Visibility ( <a href="#">What is HIT visibility?</a> )		
<input checked="" type="radio"/> Public - All Workers can see and preview my HITs		
<input type="radio"/> Private - All Workers can see my HITs, but only Workers that meet all Qualification requirements can preview my HITs		
<input type="radio"/> Hidden - Only Workers that meet my HIT Qualification requirements can see and preview my HITs		

**Survey Link Instructions** (Click to expand)

We are conducting an academic survey about your perceptions of your workplace. We need to understand your opinions and feelings about your organization. The quality of the data we receive is extremely important to us. To ensure quality, we have placed attention checks in the survey. Please read each question carefully. Participants who fail attention checks will not be paid.

This is the third part of a three-part survey. Thank you for already completing the first two surveys.

Select the link below to complete the survey. After passing a pre-screening question and consenting to take this survey, you will be directed to the 1-2 minute survey. At the end of the survey, you will receive a code to paste into the box below to receive credit for taking our survey.

**Make sure to leave this window open as you complete the survey.** When you are finished, you will return to this page to paste the code into the box.

Survey link:	<a href="https://uttyler.az1.qualtrics.com/jfe/form/SV_0xFjofhxQu9PWR">https://uttyler.az1.qualtrics.com/jfe/form/SV_0xFjofhxQu9PWR</a>
Provide the survey code here:	<input type="text" value="e.g. 123456"/>

## Appendix D. Permissions Documentation

The screenshot shows the APA PsycNET website interface. At the top, there is a header with the APA PsycNET logo and the American Psychological Association logo. Below the header, there is a navigation bar with links for 'SEARCH ▶', 'BROWSE ▶', 'APA THESAURUS', and 'Recent Searches'. A 'Back to Results' link is also present. The main content area is titled 'APA PsycNET Records' and displays a record for a test development. The record includes the following information:

Database: PsycTESTS  
Test Record Type: Test Development

**Citation**

Umphress, E. E., Bingham, J. B., & Mitchell, M. S. (2010). Unethical behavior in the name of the company: The moderating effect of organizational identification and positive reciprocity beliefs on unethical pro-organizational behavior. *Journal of Applied Psychology*, 95(4), 769-780.  
<http://dx.doi.org/10.1037/a0019214>

**Summary**

The Unethical Pro-organizational Behavior Scale was developed in 2010 to measure unethical pro-organizational behavior (UPB)—unethical behaviors conducted by employees to potentially benefit the organization. This 6-item measure assesses respondents' agreement of their willingness to perform UPB on a 7-point scale ranging from 1 (strongly disagree) to 7 (strongly agree). Initially the researchers chose 7 items, though one of these was dropped due to a low factor loading. The measure's reliability ( $\alpha = .89$ ) exceeded psychometric standards ( $\alpha = .70$ ) in a sample of 516 undergraduate business students from a large U.S. southwest university. Overall, when compared to other organizational behavior measures, the Unethical Pro-organizational Behavior Scale showed evidence of construct validity. (PsycTESTS Database Record (c) 2016 APA, all rights reserved)

Unique Identifier 9999-01319-001

## Appendix D. Continued

<b>Reported in</b>	Umphress, Elizabeth E.; Bingham, John B.; Mitchell, Marie S.. Unethical behavior in the name of the company: The moderating effect of organizational identification and positive reciprocity beliefs on unethical pro-organizational behavior. <i>Journal of Applied Psychology</i> , Vol 95(4), Jul 2010 , 769-780. doi: <a href="http://dx.doi.org/10.1037/a0019214">http://dx.doi.org/10.1037/a0019214</a>
<b>Title</b>	Unethical behavior in the name of the company: The moderating effect of organizational identification and positive reciprocity beliefs on unethical pro-organizational behavior.
<b>Publication Date</b>	Jul 2010
<b>Construct</b>	Unethical Pro-Organizational Behavior
<b>Purpose</b>	The Unethical Pro-organizational Behavior Scale was developed to measure unethical pro-organizational behavior (UPB)—unethical behaviors conducted by employees to potentially benefit the organization.
<b>Language</b>	English
<b>Author</b>	Umphress, Elizabeth E.; Bingham, John B.; Mitchell, Marie S.
<b>Email</b>	Umphress, Elizabeth E. eumphress@mays.tamu.edu
<b>Correspondence Address</b>	Umphress, Elizabeth E.: Mays Business School, Texas A&M University, College Station, Texas, United States, 77843-4221, eumphress@mays.tamu.edu

## Appendix D. Continued

Affiliation	Umphress, Elizabeth E. Bingham, John B. Mitchell, Marie S.	Texas A&M University, Texas, United States Brigham Young University, Utah, United States University of Georgia, Georgia, United States
Digital Object Identifier	<a href="http://dx.doi.org/10.1037/a0019214">http://dx.doi.org/10.1037/a0019214</a>	
Keywords	Unethical Pro-Organizational Behavior Scale; test development; internal consistency; discriminant validity; organizational behavior; employee behavior; unethical behavior benefiting organization	
Index Terms	Attitude Measures; Business Ethics; Employee Characteristics; Organizational Behavior; Test Construction; Test Reliability; Test Validity	
PsycTESTS Classification	7000 Organizational, Occupational, and Career Development	
Format	The 6-item Unethical Pro-organizational Behavior Scale assesses respondents' agreement of their willingness to perform UPB on a 7-point scale ranging from 1 (strongly disagree) to 7 (strongly agree).	
Number of items	The UPB Scale consists of a total of 6 items.	
Administration Method	Paper	
Permissions	May use for Research/Teaching	

## Appendix D. Continued

<b>Fee</b>	No
<b>Commercial</b>	No
<b>Reliability</b>	Internal consistency: The Unethical Pro-Organizational Behavior Scale exhibits good internal consistency with an alpha of .89.
<b>Validity</b>	Discriminant validity: Correlation patterns between the UPB Scale and (1) Lee and Allen's (2002) six-item in-role behavior measure, (2) Williams and Anderson's (1991) individual organizational citizenship behavior (OCB-I) six-item measure, and (c) Lee and Allen's (2002) six-item OCB-organization (OCB-O) measure supported the UPB Scale's discriminant validity.
<b>Factor Analysis</b>	No factor analysis indicated.
<b>Population Group</b>	Human; Male; Female
<b>Age Group</b>	Adulthood (18 yrs & older); Young Adulthood (18-29 yrs)
<b>Population Details</b>	<b>Sample:</b> Undergraduate business students <b>Location:</b> United States
<b>Setting</b>	Industrial/Organizational
<b>Release Date</b>	20110912

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Author	Julia Berrios
Produced by	The University of Texas at Tyler
Expected publication date	Dec 2018

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To whom it may concern:

My name is Julia Berrios and I am a doctoral student in the Human Resource Development program at The University of Texas at Tyler. I am currently evaluating several options for organizational commitment scales with one of them being the three-component measure consisting of the affective, continuance, and normative commitment scales as published in Table A.1 in the book titled "Commitment in the Workplace: Theory, Research, and Application" by the authors John P. Meyer and Natalie J. Allen (doi: <http://dx.doi.org/10.4135/9781452231556>). I would be very grateful if I could receive permission to use the affective, continuance, and normative commitment scales in my online survey for purposes of my dissertation.

Thank you for your time and consideration.

Respectfully,

Julia Berrios

Ph.D. Student in HRD/ODC  
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College of Business and Technology  
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**Author:** Ron D. Hays, Toshi Hayashi, Anita L. Stewart  
**Publication:** Educational and Psychological Measurement  
**Publisher:** SAGE Publications  
**Date:** 09/01/1989  
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## Appendix E. IRB Approvals



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Office of Research and  
Technology Transfer

Institutional Review  
Board

February 15, 2018

Dear Ms. Berrios,

Your request to conduct the study: *Exploring the Relationship between Job Stressors and Burnout*, IRB #Sp2018-102 has been approved by The University of Texas at Tyler Institutional Review Board as a study exempt from further IRB review. This approval includes a waiver of signed, written informed consent. In addition, please ensure that any research assistants are knowledgeable about research ethics and confidentiality, and any co-investigators have completed human protection training within the past three years, and have forwarded their certificates to the IRB office (G. Duke).

Please review the UT Tyler IRB Principal Investigator Responsibilities, and acknowledge your understanding of these responsibilities and the following through return of this email to the IRB Chair within one week after receipt of this approval letter:

- Prompt reporting to the UT Tyler IRB of any proposed changes to this research activity
- Prompt reporting to the UT Tyler IRB and academic department administration will be done of any unanticipated problems involving risks to subjects or others
- Suspension or termination of approval may be done if there is evidence of any serious or continuing noncompliance with Federal Regulations or any aberrations in original proposal.
- Any change in proposal procedures must be promptly reported to the IRB prior to implementing any changes except when necessary to eliminate apparent immediate hazards to the subject.
- Exempt with waiver

Best of luck in your research, and do not hesitate to contact me if you need any further assistance.

Sincerely,

A handwritten signature in black ink that reads "Gloria Duke, PhD, RN".

Gloria Duke, PhD, RN  
Chair, UT Tyler IRB

## Appendix E. Continued



THE UNIVERSITY OF TEXAS AT TYLER  
3900 University Blvd. • Tyler, TX 75799 • 903.565.5774 • FAX: 903.565.5858

Office of Research and  
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Board

May 8, 2018

Dear Ms. Berrios,

Your request to conduct the study: *Testing the structural invariance of affective commitment on unethical pro-organizational behavior across the two organizational culture types clan and hierarchy*, IRB #Sp2018-138 has been approved by The University of Texas at Tyler Institutional Review Board as a study exempt from further IRB review. This approval includes a waiver of signed, written informed consent. In addition, please ensure that any research assistants are knowledgeable about research ethics and confidentiality, and any co-investigators have completed human protection training within the past three years, and have forwarded their certificates to the IRB office (G. Duke). Please review the UT Tyler IRB Principal Investigator Responsibilities, and acknowledge your understanding of these responsibilities and the following through return of this email to the IRB Chair within one week after receipt of this approval letter:

- Prompt reporting to the UT Tyler IRB of any proposed changes to this research activity
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- Any change in proposal procedures must be promptly reported to the IRB prior to implementing any changes except when necessary to eliminate apparent immediate hazards to the subject.
- Exempt with waiver

Best of luck in your research, and do not hesitate to contact me if you need any further assistance.

Sincerely,

A handwritten signature in black ink that reads "Gloria Duke, PhD, RN".

Gloria Duke, PhD, RN  
Chair, UT Tyler IRB

## Appendix F. Syntax

```
###Install necessary packages (first time only)
install.packages("yhat")
install.packages("car")
install.packages("psych")
install.packages("lsr")
install.packages("yacca")
install.packages("MBESS")
install.packages("DiscriMiner")
install.packages ("mvtboost")
install.packages ("dummies")
install.packages ("MVN")
install.packages("candisc")
install.packages("effects")
install.packages("multcomp")
install.packages("MASS")
install.packages("MatchIt")
install.packages("nonrandom")
install.packages("effsize")
install.packages("optmatch")
install.packages("Matching")
install.packages("rgenoud")

###Load necessary packages
library(yhat)
library(car)
library(psych)
library(lsr)
library(yacca)
library(MBESS)
library(DiscriMiner)
library(mvtboost)
library(dummies)
library(MVN)
library(candisc)
library(effects)
library(multcomp)
library(MASS)
library(MatchIt)
library(nonrandom)
library(effsize)
library(optmatch)
library(Matching)
library(rgenoud)
```

## Appendix F. Continued

```
#####
###Survey 1#####
#####

###Read in dataset (one version with coded values and the other as choice text
dso1 <-
  read.table("Survey1_NV.csv",
    header=TRUE, sep=",", na.strings="NA", dec=".",
    strip.white=TRUE)
dso2 <-
  read.table("Survey1_CT.csv",
    header=TRUE, sep=",", na.strings="NA", dec=".",
    strip.white=TRUE)

###Create dataset with coded values
ds<-dso1

###Ovewrite demographics and screening questions with data from choice text file
ds[,c("Gender","Age","Race","Edu","Industry","Company.Size","Company.Age","Tenure",
      "Mgmt")]<-
dso2[,c("Gender","Age","Race","Edu","Industry","Company.Size","Company.Age","Tenure",
      "Mgmt")]

###See total responses
nrow(ds)
names(ds)

###Initialize delete variable
ds$DeleteS1<- "Keep"

###Flag responses that did not pass screening questions
table(ds$Screen1Survey1,useNA="ifany")
ds$DeleteS1[(ds$DeleteS1=="Keep") & (ds$Screen1Survey1!=1)]<- "Screen1"
table(ds$DeleteS1)

table(ds$Screen2Survey1,useNA="ifany")
ds$DeleteS1[(ds$DeleteS1=="Keep") & (ds$Screen2Survey1!=1)]<- "Screen2"
table(ds$DeleteS1)

###Flag responses from BOTs
table(ds$BOTSurvey1,useNA="ifany")
ds$DeleteS1[(ds$DeleteS1=="Keep") & (ds$BOTSurvey1!=4)]<- "BOT"
table(ds$DeleteS1)
```

## Appendix F. Continued

```
####Flag responses that did not consent
table(ds$ConsentSurvey1,useNA="ifany")
ds$DeleteS1[(ds$DeleteS1=="Keep") & is.na(ds$ConsentSurvey1)]<- "Consent"
table(ds$DeleteS1)

####Flag incompleters
table(ds$FinishedSurvey1)
ds$DeleteS1[(ds$DeleteS1=="Keep")&(ds$FinishedSurvey1!=1)]<- "Incomplete"
table(ds$DeleteS1)

####Create variable that shows elapsed time of survey
ds$TimeSurvey1<-ds$Duration..in.seconds.Survey1/60

####Flag responses for 55 years and older
table(ds$Age,useNA="ifany")
ds$DeleteS1[(ds$DeleteS1=="Keep") & (ds$Age=="55 years and older")]<- "Age"
table(ds$DeleteS1)

####Flag responses for not service industry sector
table(ds$Industry)
ds$DeleteS1[(ds$DeleteS1=="Keep") & (ds$Industry!="Service-providing")]<- "Industry"
table(ds$DeleteS1)

####Flag responses for management
table(ds$Mgmt)
ds$DeleteS1[(ds$DeleteS1=="Keep") & (ds$Mgmt=="Yes")]<- "Mgmt"
table(ds$DeleteS1)

#### Save clean file including only responses from MTurk workers who will be invited to
take survey 2
ds<-subset(ds,DeleteS1=="Keep")
nrow(ds)
write.csv(ds,"CleanSurvey1.csv",row.names=FALSE)

#####
#####Survey 2#####
#####

####Read in dataset (CSV format)
ds <-
read.table("Survey2_NV.csv",
header=TRUE, sep=",", na.strings="NA", dec=".",
strip.white=TRUE)
```

## Appendix F. Continued

```
####See total responses
nrow(ds)
names(ds)

####Initialize delete variable
ds$DeleteS2<-"Keep"

####Flag responses from BOTs
table(ds$BOTSurvey2,useNA="ifany")
ds$DeleteS2[(ds$DeleteS2=="Keep") & (ds$BOTSurvey2!=4)]<- "BOT"
table(ds$DeleteS2)

####Flag responses that did not consent
table(ds$ConsentSurvey2,useNA="ifany")
ds$DeleteS2[(ds$DeleteS2=="Keep") & is.na(ds$ConsentSurvey2)]<- "Consent"
table(ds$DeleteS2)

####Flag incompleters
table(ds$FinishedSurvey2)
ds$DeleteS2[(ds$DeleteS2=="Keep")&(ds$FinishedSurvey2!=1)]<- "Incomplete"
table(ds$DeleteS2)

####Omit unusable responses
ds<-subset(ds,DeleteS2=="Keep")
nrow(ds)

####Create variable that shows elapsed time of survey
ds$TimeSurvey2<-ds$Duration..in.seconds.Survey2/60

#### Save a clean file to determine the average completion time and thus the time-outliers
#write.csv(ds,"AverageSurveyCompletionTimeSurvey2.csv",row.names=FALSE)

####Flag duration <2 minutes
ds$DeleteS2[(ds$DeleteS2=="Keep")&((ds$TimeSurvey2<2) )]<- "Time"
table(ds$DeleteS2)

####Omit unusable responses
ds<-subset(ds,DeleteS2=="Keep")
nrow(ds)

####Create variable that shows standard deviation of how people respond to AC items
ds$ACsd<- apply(subset(ds,select=OC_AC1:OC_AC6R),1,sd)
```

## Appendix F. Continued

```

####Create variable that shows standard deviation of how people respond to IM items
ds$IMsd<- apply(subset(ds,select=IM_IM1R:IM_IM9),1,SD)

####Flag straight lined responses to DVs, and IVs
ds$DeleteS2[(ds$DeleteS2=="Keep") & ((ds$ACsd==0)|(ds$IMsd==0))]<- "Straightline"
table(ds$DeleteS2)

####Omit unusable responses
ds<-subset(ds,DeleteS2=="Keep")
nrow(ds)

####Reverse Code OC_AC3R,OC_AC4R,OC_AC6R
ds[,c("OC_AC3R","OC_AC4R","OC_AC6R")]<-8-
ds[,c("OC_AC3R","OC_AC4R","OC_AC6R")]

####Reverse Code IM_IM1R,IM_IM4R,IM_IM6R,IM_IM7R,IM_IM8R
ds[,c("IM_IM1R","IM_IM4R","IM_IM6R","IM_IM7R","IM_IM8R")]<-6-
ds[,c("IM_IM1R","IM_IM4R","IM_IM6R","IM_IM7R","IM_IM8R")]
#edit(ds)
#nrow(ds)

####Create scales scores for Culture Groups
ds$ClanCult<-
apply(subset(ds,select=c("CVF1_CC1","CVF1_CC2","CVF1_CC3","CVF2_CC4","CVF2_CC5","CVF2_CC6")),1,mean)
ds$AdhoCult<-
apply(subset(ds,select=c("CVF1_AC1","CVF1_AC2","CVF1_AC3","CVF2_AC4","CVF2_AC5","CVF2_AC6")),1,mean)
ds$MarkCult<-
apply(subset(ds,select=c("CVF1_MC1","CVF1_MC2","CVF1_MC3","CVF2_MC4","CVF2_MC5","CVF2_MC6")),1,mean)
ds$HierCult<-
apply(subset(ds,select=c("CVF1_HC1","CVF1_HC2","CVF1_HC3","CVF2_HC4","CVF2_HC5","CVF2_HC6")),1,mean)

####Create scales scores for UPB
ds$UPB_T1<-
apply(subset(ds,select=c("UPB_UPB1.T1","UPB_UPB2.T1","UPB_UPB3.T1","UPB_UPB4.T1","UPB_UPB5.T1","UPB_UPB6.T1")),1,mean)

####Create scales scores for OC_AC
ds$OC_AC<-
apply(subset(ds,select=c("OC_AC1","OC_AC2","OC_AC3R","OC_AC4R","OC_AC5","OC_AC6R")),1,mean)

```

## Appendix F. Continued

```
####Create scales scores for OC_OCQ
ds$OC_OCQ<-
apply(subset(ds,select=c("OCQ_OCQ1","OCQ_OCQ2","OCQ_OCQ3","OCQ_OCQ4",
"OCQ_OCQ5","OCQ_OCQ6","OCQ_OCQ7","OCQ_OCQ8","OCQ_OCQ9")),1,mean)

####Create scales scores for IM
ds$SD_IM<-
apply(subset(ds,select=c("IM_IM1R","IM_IM2","IM_IM3","IM_IM4R","IM_IM5","IM
_IM6R","IM_IM7R","IM_IM8R","IM_IM9","IM_IM10")),1,mean)

### Save data file
write.csv(ds,"CleanSurvey2.csv",row.names=FALSE)

###Determine Dominant Culture for each individual response using Excel
###and create "DomCult" column indicating dominant culture
###and save as "CleanSurvey2wCult"

###Look at number of responses per culture
ds <-
read.table("CleanSurvey2wCult.csv",
header=TRUE, sep=",", na.strings="NA", dec=". ", strip.white=TRUE)

###Look at dataset
nrow(ds)
table(ds$DomCult)
table(ds$DomCult)/nrow(ds)

#####
#####Survey 3#####
#####

###Read in dataset in CSV format
ds <-
read.table("Survey3_NV.csv",
header=TRUE, sep=",", na.strings="NA", dec=". ", strip.white=TRUE)

###See total responses
nrow(ds)
names(ds)

###Initialize delete variable
ds$DeleteS3<-"Keep"
```

## Appendix F. Continued

```
###Flag responses from BOTs
table(ds$BOTSurvey3,useNA="ifany")
ds$DeleteS3[(ds$DeleteS3=="Keep") & (ds$BOTSurvey3!=4)]<- "BOT"
table(ds$DeleteS3)

###Flag responses that did not consent
table(ds$ConsentSurvey3,useNA="ifany")
ds$DeleteS3[(ds$DeleteS3=="Keep") & (ds$ConsentSurvey3!=1)]<- "Consent"
table(ds$DeleteS3)

###Flag incompleters
table(ds$FinishedSurvey3)
ds$DeleteS3[(ds$DeleteS3=="Keep")&(ds$FinishedSurvey3!=1)]<- "Incomplete"
table(ds$DeleteS3)

###Omit unusable responses
ds<-subset(ds,DeleteS3=="Keep")
nrow(ds)

###Create variable that shows elapsed time of survey
ds$TimeSurvey3<-ds$Duration..in.seconds.Survey3/60

### Save a clean file to determine the average completion time and thus the time-outliers
#write.csv(ds,"AverageSurveyCompletionTimeSurvey3.csv",row.names=FALSE)

###Flag duration <0.3 minutes
ds$DeleteS3[(ds$DeleteS3=="Keep")&((ds$TimeSurvey3<0.3))]<- "Time"
table(ds$DeleteS3)

###Omit unusable responses
ds<-subset(ds,DeleteS3=="Keep")
nrow(ds)

###Create scales scores for UPB
ds$UPB_T2<-
apply(subset(ds,select=c("UPB_UPB1.T2","UPB_UPB2.T2","UPB_UPB3.T2","UPB_UPB4.T2","UPB_UPB5.T2","UPB_UPB6.T2")),1,mean)

### Save data file
write.csv(ds,"CleanSurvey3.csv",row.names=FALSE)
```

## Appendix F. Continued

```
#####
###Merge Datasets#####
#####

### Combine survey responses of multiple waves
###Read in datasets
Survey1<-
  read.table("CleanSurvey1.csv",
             header=TRUE, sep=",", na.strings="NA", dec=".",
             strip.white=TRUE)
Survey2<-
  read.table("CleanSurvey2wCult.csv",
             header=TRUE, sep=",", na.strings="NA", dec=".",
             strip.white=TRUE)
Survey3<-
  read.table("CleanSurvey3.csv",
             header=TRUE, sep=",", na.strings="NA", dec=".",
             strip.white=TRUE)

###Look at dataset
nrow(Survey1)
nrow(Survey2)
nrow(Survey3)

###Merge datasets
MergedData <- merge(Survey1,Survey2,by="WorkerID")
nrow(MergedData)
MergedData <- merge(MergedData,Survey3,by="WorkerID")
nrow(MergedData)

###Save merged file
write.csv(MergedData,"Surveys123Combined.csv",row.names=FALSE)

###Look at dataset and remove responses with more than one failed IMC as well as other
responses that indicate a lack of engagement
###One response was removed

#####
###Assess Cultures###
#####

###Read in datasets
ds <-
  read.table("Surveys123Combined.csv",
             header=TRUE, sep=",", na.strings="NA", dec=".",
             strip.white=TRUE)
```

## Appendix F. Continued

```
####Look at dataset
nrow(ds)
table(ds$DomCult)
table(ds$DomCult)/nrow(ds)

####Initialize delete variable
ds$Delete<-"Keep"

####Remove dominant cultures that are not of interest
#ds$Delete[(ds$Delete=="Keep")&((ds$DomCult==2) | (ds$DomCult==3) |
(ds$DomCult==0))]<-"DomCult"
#table(ds$Delete)

ds$Delete[(ds$Delete=="Keep")&(ds$DomCult==2)]<- "ACult"
table(ds$Delete)

ds$Delete[(ds$Delete=="Keep")&(ds$DomCult==3)]<- "MCult"
table(ds$Delete)

ds$Delete[(ds$Delete=="Keep")&(ds$DomCult==0)]<- "NoCult"
table(ds$Delete)

####Omit unusable responses
ds<-subset(ds,Delete=="Keep")
nrow(ds)
#edit(ds)

table(ds$DomCult)
table(ds$DomCult)/nrow(ds)

#####
###Demographics###
#####

####Look at combined dataset for ALL 4 cultures###
ds <-
  read.table("Surveys123Combined.csv",
  header=TRUE, sep=",", na.strings="NA", dec=".",
  strip.white=TRUE)
nrow(ds)
```

## Appendix F. Continued

```
###Create a subset with the variables of interest  
describe(subset(ds,select=c(CVF1_CC1:CVF2_HC6)))
```

```
table(ds$Gender)  
table(ds$Gender)/nrow(ds)
```

```
table(ds$Age)  
table(ds$Age)/nrow(ds)
```

```
table(ds$Race)  
table(ds$Race)/nrow(ds)
```

```
table(ds$Edu)  
table(ds$Edu)/nrow(ds)
```

```
table(ds$Company.Size)  
table(ds$Company.Size)/nrow(ds)
```

```
table(ds$Company.Age)  
table(ds$Company.Age)/nrow(ds)
```

```
###Look at combined dataset for CC and HC###
```

```
ds <-  
  read.table("Surveys123Combined.csv",  
            header=TRUE, sep=",", na.strings="NA", dec=".")  
  strip.white=TRUE)  
ds<-subset(ds,(DomCult==1 | ds$DomCult==4))  
nrow(ds)
```

```
###Create a subset with the variables of interest  
describe(subset(ds,select=c(CVF1_CC1:CVF2_HC6)))
```

```
table(ds$Gender)  
table(ds$Gender)/nrow(ds)
```

```
table(ds$Age)  
table(ds$Age)/nrow(ds)
```

```
table(ds$Race)  
table(ds$Race)/nrow(ds)
```

## Appendix F. Continued

```
table(ds$Edu)
table(ds$Edu)/nrow(ds)

table(ds$Company.Size)
table(ds$Company.Size)/nrow(ds)

table(ds$Company.Age)
table(ds$Company.Age)/nrow(ds)

#### Save data separate file for CH
write.csv(ds,"CHCultures.csv",row.names=FALSE)

####Get dataset with just CC####
ds <-
  read.table("Surveys123Combined.csv",
             header=TRUE, sep=",", na.strings="NA", dec=".",
             strip.white=TRUE)
ds<-subset(ds,DomCult==1)
nrow(ds)

####Create a subset with the variables of interest
describe(subset(ds,select=c(CVF1_CC1:CVF2_HC6)))

table(ds$Gender)
table(ds$Gender)/nrow(ds)

table(ds$Age)
table(ds$Age)/nrow(ds)

table(ds$Race)
table(ds$Race)/nrow(ds)

table(ds$Edu)
table(ds$Edu)/nrow(ds)

table(ds$Company.Size)
table(ds$Company.Size)/nrow(ds)

table(ds$Company.Age)
table(ds$Company.Age)/nrow(ds)
```

## Appendix F. Continued

```
####Get dataset with just HC#####
ds <-
  read.table("Surveys123Combined.csv",
  header=TRUE, sep=",", na.strings="NA", dec=".",
  strip.white=TRUE)
ds<-subset(ds,DomCult==4)
nrow(ds)

####Create a subset with the variables of interest
describe(subset(ds,select=c(CVF1_CC1:CVF2_HC6)))

table(ds$Gender)
table(ds$Gender)/nrow(ds)

table(ds$Age)
table(ds$Age)/nrow(ds)

table(ds$Race)
table(ds$Race)/nrow(ds)

table(ds$Edu)
table(ds$Edu)/nrow(ds)

table(ds$Company.Size)
table(ds$Company.Size)/nrow(ds)

table(ds$Company.Age)
table(ds$Company.Age)/nrow(ds)

#####
###Simplify Demographic Groups###
#####

####Use SPSS for this "CHCultures"#####
### save as "CHCulturesSimple"###

#####
###Demographics of Simplified Data ###
#####
```

## Appendix F. Continued

```
####Look at combined dataset for CC and HC#####
ds <-
  read.table("CHCulturesSimple.csv",
  header=TRUE, sep=",", na.strings="NA", dec=".",
  strip.white=TRUE)
ds<-subset(ds,(DomCult==1 | ds$DomCult==4))
nrow(ds)

####Create a subset with the variables of interest
describe(subset(ds,select=c(CVF1_CC1:CVF2_HC6)))

#Gender: 0=female, 1=male
table(ds$Gender2)
table(ds$Gender2)/nrow(ds)

#Age: 0=18 to 24 years, 1=#25 to 54 years
table(ds$Age2)
table(ds$Age2)/nrow(ds)

#Race: 0=non-white, 1=white
table(ds$Race2)
table(ds$Race2)/nrow(ds)

#Education: 0=#2-year degree or less, 1=4-year degree or higher
table(ds$Edu2)
table(ds$Edu2)/nrow(ds)

#Company Size: 0=1-499 employees, 1=500 or more employees
table(ds$Company.Size2)
table(ds$Company.Size2)/nrow(ds)

#Company Age: 0=0-9, 1=10+
table(ds$Company.Age2)
table(ds$Company.Age2)/nrow(ds)

#Tenure: 0=0-4, 1=5+
table(ds$Tenure2)
table(ds$Tenure2)/nrow(ds)

####Get dataset with just CC#####
ds <-
  read.table("CHCulturesSimple.csv",
  header=TRUE, sep=",", na.strings="NA", dec=".",
  strip.white=TRUE)
ds<-subset(ds,DomCult==1)
nrow(ds)
```

## Appendix F. Continued

```
###Create a subset with the variables of interest
describe(subset(ds,select=c(CVF1_CC1:CVF2_HC6)))

#Gender: 0=female, 1=male
table(ds$Gender2)
table(ds$Gender2)/nrow(ds)

#Age: 0=18 to 24 years, 1=#25 to 54 years
table(ds$Age2)
table(ds$Age2)/nrow(ds)

#Race: 0=non-white, 1=white
table(ds$Race2)
table(ds$Race2)/nrow(ds)

#Education: 0=#2-year degree or less, 1=4-year degree or higher
table(ds$Edu2)
table(ds$Edu2)/nrow(ds)

#Company Size: 0=1-499 employees, 1=500 or more employees
table(ds$Company.Size2)
table(ds$Company.Size2)/nrow(ds)

#Company Age: 0=0-9, 1=10+
table(ds$Company.Age2)
table(ds$Company.Age2)/nrow(ds)

#Tenure: 0=0-4, 1=5+
table(ds$Tenure2)
table(ds$Tenure2)/nrow(ds)

### Save data separate file for CC
write.csv(ds,"CCulturesSimple.csv",row.names=FALSE)

###Get dataset with just HC###
ds <-
  read.table("CHCulturesSimple.csv",
             header=TRUE, sep=",", na.strings="NA", dec=".",
             strip.white=TRUE)
ds<-subset(ds,DomCult==4)
nrow(ds)
```

## Appendix F. Continued

```
###Create a subset with the variables of interest
describe(subset(ds,select=c(CVF1_CC1:CVF2_HC6)))

#Gender: 0=female, 1=male
table(ds$Gender2)
table(ds$Gender2)/nrow(ds)

#Age: 0=18 to 24 years, 1=#25 to 54 years
table(ds$Age2)
table(ds$Age2)/nrow(ds)

#Race: 0=non-white, 1=white
table(ds$Race2)
table(ds$Race2)/nrow(ds)

#Education: 0=#2-year degree or less, 1=4-year degree or higher
table(ds$Edu2)
table(ds$Edu2)/nrow(ds)

#Company Size: 0=1-499 employees, 1=500 or more employees
table(ds$Company.Size2)
table(ds$Company.Size2)/nrow(ds)

#Company Age: 0=0-9, 1=10+
table(ds$Company.Age2)
table(ds$Company.Age2)/nrow(ds)

#Tenure: 0=0-4, 1=5+
table(ds$Tenure2)
table(ds$Tenure2)/nrow(ds)

### Save data separate file for HC
write.csv(ds,"HCulturesSimple.csv",row.names=FALSE)
```

## Appendix F. Continued

```
#####
###Chi-square Tests Before PSM###
#####

#dependent variables are diverse demographics and the independent variable is
#organizational culture
#The chi-square models tests the hypothesis that organizational culture has a statistically
#and practically significant effect on diverse demographics
#H0: the two variables are independent of each other

### Read in data set
ds<-
  read.table("CHCulturesSimple.csv",
             header=TRUE, sep=",", na.strings="NA", dec=".",
             strip.white=TRUE)
#names(ds)
nrow(ds)

#####some variables require adjustments to levels due to categorical data
ds$DomCult2 = factor(ds$DomCult2)
table(ds$DomCult2)
ds$Gender2 = factor(ds$Gender2)
table(ds$Gender2)
ds$Age2 = factor(ds$Age2)
table(ds$Age2)
ds$Race2 = factor(ds$Race2)
table(ds$Race2)
ds$Edu2 = factor(ds$Edu2)
table(ds$Edu2)
ds$Company.Size2 = factor(ds$Company.Size2)
table(ds$Company.Size2)
ds$Company.Age2 = factor(ds$Company.Age2)
table(ds$Company.Age2)
ds$Tenure2 = factor(ds$Tenure2)
table(ds$Tenure2)

###Gender
###descriptive statistics on Gender by Dominant Organizational Culture
(x.outgender<-table(ds$Gender2,ds$DomCult2))
###chi-test on Gender by Organizational Culture
chisq.test(x.outgender,correct=FALSE)
cramersV(x.outgender)
```

## Appendix F. Continued

```
####Age
####descriptive statistics on Age by Dominant Organizational Culture
(x.outage<-table(ds$Age2,ds$DomCult2))
###chi-test on Age by Organizational Culture
chisq.test(x.outage,correct=FALSE)
cramersV(x.outage)

####Race
####descriptive statistics on Race by Dominant Organizational Culture
(x.outrace<-table(ds$Race2,ds$DomCult2))
###chi-test on Race by Organizational Culture
chisq.test(x.outrace,correct=FALSE)
cramersV(x.outrace)

####Edu
####descriptive statistics on Edu by Dominant Organizational Culture
(x.outedu<-table(ds$Edu2,ds$DomCult2))
###chi-test on Edu by Organizational Culture
chisq.test(x.outedu,correct=FALSE)
cramersV(x.outedu)

####Company.Size
####descriptive statistics on Company.Size by Dominant Organizational Culture
(x.outcompsize<-table(ds$Company.Size2,ds$DomCult2))
###chi-test on Company.Size by Organizational Culture
chisq.test(x.outcompsize,correct=FALSE)
cramersV(x.outcompsize)

####Company.Age
####descriptive statistics on Company.Age by Dominant Organizational Culture
(x.outcompage<-table(ds$Company.Age2,ds$DomCult2))
###chi-test on Company.Age by Organizational Culture
chisq.test(x.outcompage,correct=FALSE)
cramersV(x.outcompage)

####Tenure
####descriptive statistics on Tenure by Dominant Organizational Culture
(x.outtenure<-table(ds$Tenure2,ds$DomCult2))
###chi-test on Tenure by Organizational Culture
chisq.test(x.outtenure,correct=FALSE)
cramersV(x.outtenure)
```

## Appendix F. Continued

```
#####
#propensity score matching#
#nearest neighbor matching#
#####

### remove IM colums before conducting PSM###

ds <-
  read.table("CHCulturesSimple.csv",
  header=TRUE, sep=",", na.strings="NA", dec=".",
  strip.white=TRUE)
#head(ds)
nrow(ds)
#names(ds)

# getting rid of missing values
ds = as.data.frame(na.omit(ds))

# matching for ALL VARIABLES using nearest neighbor
m.out <- matchit(DomCult2 ~
Gender2+Age2+Race2+Edu2+Company.Size2+Company.Age2+Tenure2, data = ds,
distance = "logit", method = "nearest", caliper=.20, replace = FALSE)
summary(m.out, interactions = FALSE, standardize = TRUE)

#extract datafile (m.data) with matched cases
m.data<-match.data(object=m.out, group="all", distance = "distance", weights =
"weights")
by(m.data, m.data$DomCult2, describe)
ps <- pscore(data=m.data, DomCult2 ~
Gender2+Age2+Race2+Edu2+Company.Size2+Company.Age2+Tenure2, name.pscore="ps")
plot.pscore(ps, main="Propensity Score Distributions", with.legend=TRUE,
par.1=list(lty=1,lwd=2), par.0=list(lty=3,lwd=2),
ylab = "", ylim=c(0,5.5), xlim=c(0,1.0))

nrow(m.data)
head(m.data)

### Save data after PSM
write.csv(m.data,"CHCulturesPSM.csv",row.names=FALSE)
```

## Appendix F. Continued

```
#####
###Chi-square Tests After PSM###
#####

###Create new dataset and check data
ds<-m.data
nrow(ds)
head(ds)

###Gender
###descriptive statistics on Gender by Dominant Organizational Culture
(x.outgender<-table(ds$Gender2,ds$DomCult2))
###chi-test on Gender by Organizational Culture
chisq.test(x.outgender,correct=FALSE)
cramersV(x.outgender)

###Age
###descriptive statistics on Age by Dominant Organizational Culture
(x.outage<-table(ds$Age2,ds$DomCult2))
###chi-test on Age by Organizational Culture
chisq.test(x.outage,correct=FALSE)
cramersV(x.outage)

###Race
###descriptive statistics on Race by Dominant Organizational Culture
(x.outrace<-table(ds$Race2,ds$DomCult2))
###chi-test on Race by Organizational Culture
chisq.test(x.outrace,correct=FALSE)
cramersV(x.outrace)

###Edu
###descriptive statistics on Edu by Dominant Organizational Culture
(x.outedu<-table(ds$Edu2,ds$DomCult2))
###chi-test on Edu by Organizational Culture
chisq.test(x.outedu,correct=FALSE)
cramersV(x.outedu)

###Company.Size
###descriptive statistics on Company.Size by Dominant Organizational Culture
(x.outcompsize<-table(ds$Company.Size2,ds$DomCult2))
###chi-test on Company.Size by Organizational Culture
chisq.test(x.outcompsize,correct=FALSE)
cramersV(x.outcompsize)
```

## Appendix F. Continued

```
####Company.Age
####descriptive statistics on Company.Age by Dominant Organizational Culture
(x.outcompage<-table(ds$Company.Age2,ds$DomCult2))
###chi-test on Company.Age by Organizational Culture
chisq.test(x.outcompage,correct=FALSE)
cramersV(x.outcompage)

####Tenure
####descriptive statistics on Tenure by Dominant Organizational Culture
(x.outtenure<-table(ds$Tenure2,ds$DomCult2))
###chi-test on Tenure by Organizational Culture
chisq.test(x.outtenure,correct=FALSE)
cramersV(x.outtenure)

#####
#####
###PSM USING Genetic Matching and only variables w Practical Significance
#
### This PSM output is what will be written to csv and will then be loaded to
SPSS/AMOS #
#####
#####

ds <-
read.table("CHCulturesSimple.csv",
  header=TRUE, sep=",", na.strings="NA", dec=".",
  strip.white=TRUE)
#head(ds)
nrow(ds)
#names(ds)

# matching for Company.Size2 using genetic matching
set.seed(050518)
m.out <- matchit(DomCult2 ~ Company.Size2+Gender2, data = ds,
  distance = "logit",
  method = "genetic", caliper=.20, replace = FALSE)
summary(m.out, interactions = FALSE, standardize = TRUE)

#extract datafile (m.data) with matched cases
m.data<-match.data(object=m.out, group="all", distance = "distance",
  weights = "weights")
by(m.data, m.data$DomCult2, describe)
ps <- pscore(data=m.data, DomCult2 ~
  Gender2+Age2+Race2+Edu2+Company.Size2+Company.Age2+Tenure2,
  name.pscore="ps")
```

## Appendix F. Continued

```
plot.pscore(ps, main="Propensity Score Distributions", with.legend=TRUE,
par.1=list(lty=1,lwd=2), par.0=list(lty=3,lwd=2),
ylab = "",ylim=c(0,5.5), xlim=c(0,1.0))

nrow(m.data)
head(m.data)

### Save data after PSM
write.csv(m.data,"CHCulturesPSM.csv",row.names=FALSE)

#####
###Chi-square Tests After PSM###
#####

###Create new dataset and check data
ds<-m.data
nrow(ds)
#head(ds)

###Gender
###descriptive statistics on Gender by Dominant Organizational Culture
(x.outgender<-table(ds$Gender2,ds$DomCult2))
###chi-test on Gender by Organizational Culture
chisq.test(x.outgender,correct=FALSE)
cramersV(x.outgender)

###Age
###descriptive statistics on Age by Dominant Organizational Culture
(x.outage<-table(ds$Age2,ds$DomCult2))
###chi-test on Age by Organizational Culture
chisq.test(x.outage,correct=FALSE)
cramersV(x.outage)

###Race
###descriptive statistics on Race by Dominant Organizational Culture
(x.outrace<-table(ds$Race2,ds$DomCult2))
###chi-test on Race by Organizational Culture
chisq.test(x.outrace,correct=FALSE)
cramersV(x.outrace)
```

## Appendix F. Continued

```
####Edu
####descriptive statistics on Edu by Dominant Organizational Culture
(x.outedu<-table(ds$Edu2,ds$DomCult2))
###chi-test on Edu by Organizational Culture
chisq.test(x.outedu,correct=FALSE)
cramersV(x.outedu)

####Company.Size
####descriptive statistics on Company.Size by Dominant Organizational Culture
(x.outcompsize<-table(ds$Company.Size2,ds$DomCult2))
###chi-test on Company.Size by Organizational Culture
chisq.test(x.outcompsize,correct=FALSE)
cramersV(x.outcompsize)

####Company.Age
####descriptive statistics on Company.Age by Dominant Organizational Culture
(x.outcompage<-table(ds$Company.Age2,ds$DomCult2))
###chi-test on Company.Age by Organizational Culture
chisq.test(x.outcompage,correct=FALSE)
cramersV(x.outcompage)

####Tenure
####descriptive statistics on Tenure by Dominant Organizational Culture
(x.outtenure<-table(ds$Tenure2,ds$DomCult2))
###chi-test on Tenure by Organizational Culture
chisq.test(x.outtenure,correct=FALSE)
cramersV(x.outtenure)

#####
###Demographics Simple###
#####

####Look at combined dataset for CC and HC###
ds <-
  read.table("CHCulturesPSM.csv",
  header=TRUE, sep=",", na.strings="NA", dec=".",
  strip.white=TRUE)

####Create a subset with the variables of interest
describe(subset(ds,select=c(CVF1_CC1:CVF2_HC6)))

table(ds$Gender2)
table(ds$Gender2)/nrow(ds)
```

## Appendix F. Continued

```
table(ds$Age2)
table(ds$Age2)/nrow(ds)

table(ds$Race2)
table(ds$Race2)/nrow(ds)

table(ds$Edu2)
table(ds$Edu2)/nrow(ds)

table(ds$Company.Size2)
table(ds$Company.Size2)/nrow(ds)

table(ds$Company.Age2)
table(ds$Company.Age2)/nrow(ds)

table(ds$Tenure2)
table(ds$Tenure2)/nrow(ds)

####Get dataset with just CC####
ds <-
  read.table("CHCulturesPSM.csv",
  header=TRUE, sep=",", na.strings="NA", dec=".",
  strip.white=TRUE)
dsCC<-subset(ds,DomCult==1)
nrow(dsCC)

####Create a subset with the variables of interest
describe(subset(dsCC,select=c(CVF1_CC1:CVF2_HC6)))

table(dsCC$Gender2)
table(dsCC$Gender2)/nrow(dsCC)

table(dsCC$Age2)
table(dsCC$Age2)/nrow(dsCC)

table(dsCC$Race2)
table(dsCC$Race2)/nrow(dsCC)

table(dsCC$Edu2)
table(dsCC$Edu2)/nrow(dsCC)

table(dsCC$Company.Size2)
table(dsCC$Company.Size2)/nrow(dsCC)
```

## Appendix F. Continued

```
table(dsCC$Company.Age2)
table(dsCC$Company.Age2)/nrow(dsCC)

table(dsCC$Tenure2)
table(dsCC$Tenure2)/nrow(dsCC)

### Save data separate file for CC
write.csv(dsCC,"CCulturesPSM.csv",row.names=FALSE)

###Get dataset with just HC###
ds <-
  read.table("CHCulturesPSM.csv",
             header=TRUE, sep=",", na.strings="NA", dec=".",
             strip.white=TRUE)
dsHC<-subset(ds,DomCult==4)
nrow(dsHC)

###Create a subset with the variables of interest
describe(subset(dsHC,select=c(CVF1_CC1:CVF2_HC6)))

table(dsHC$Gender2)
table(dsHC$Gender2)/nrow(dsHC)

table(dsHC$Age2)
table(dsHC$Age2)/nrow(dsHC)

table(dsHC$Race2)
table(dsHC$Race2)/nrow(dsHC)

table(dsHC$Edu2)
table(dsHC$Edu2)/nrow(dsHC)

table(dsHC$Company.Size2)
table(dsHC$Company.Size2)/nrow(dsHC)

table(dsHC$Company.Age2)
table(dsHC$Company.Age2)/nrow(dsHC)

table(dsHC$Tenure2)
table(dsHC$Tenure2)/nrow(dsHC)

### Save data separate file for HC
write.csv(dsHC,"HCulturesPSM.csv",row.names=FALSE)
```

## Appendix F. Continued

```
#####
###Demographics Detail###
#####

###Look at combined dataset for CC and HC###
ds <-
  read.table("CHCulturesPSM.csv",
 header=TRUE, sep=",", na.strings="NA", dec=".",
 strip.white=TRUE)

###Create a subset with the variables of interest
describe(subset(ds,select=c(CVF1_CC1:CVF2_HC6)))

table(ds$Gender)
table(ds$Gender)/nrow(ds)

table(ds$Age)
table(ds$Age)/nrow(ds)

table(ds$Race)
table(ds$Race)/nrow(ds)

table(ds$Edu)
table(ds$Edu)/nrow(ds)

table(ds$Company.Size)
table(ds$Company.Size)/nrow(ds)

table(ds$Company.Age)
table(ds$Company.Age)/nrow(ds)

table(ds$Tenure2)
table(ds$Tenure2)/nrow(ds)

###Get dataset with just CC###
ds <-
  read.table("CHCulturesPSM.csv",
 header=TRUE, sep=",", na.strings="NA", dec=".",
 strip.white=TRUE)
dsCC<-subset(ds,DomCult==1)
nrow(dsCC)
```

## Appendix F. Continued

```
###Create a subset with the variables of interest
describe(subset(dsCC,select=c(CVF1_CC1:CVF2_HC6)))

table(dsCC$Gender)
table(dsCC$Gender)/nrow(dsCC)

table(dsCC$Age)
table(dsCC$Age)/nrow(dsCC)

table(dsCC$Race)
table(dsCC$Race)/nrow(dsCC)

table(dsCC$Edu)
table(dsCC$Edu)/nrow(dsCC)

table(dsCC$Company.Size)
table(dsCC$Company.Size)/nrow(dsCC)

table(dsCC$Company.Age)
table(dsCC$Company.Age)/nrow(dsCC)

table(dsCC$Tenure2)
table(dsCC$Tenure2)/nrow(dsCC)

###Get dataset with just HC###
ds <-
  read.table("CHCulturesPSM.csv",
             header=TRUE, sep=",", na.strings="NA", dec=".",
             strip.white=TRUE)
dsHC<-subset(ds,DomCult==4)
nrow(dsHC)

###Create a subset with the variables of interest
describe(subset(dsHC,select=c(CVF1_CC1:CVF2_HC6)))

table(dsHC$Gender)
table(dsHC$Gender)/nrow(dsHC)

table(dsHC$Age)
table(dsHC$Age)/nrow(dsHC)

table(dsHC$Race)
table(dsHC$Race)/nrow(dsHC)
```

## Appendix F. Continued

```
table(dsHC$Edu)
table(dsHC$Edu)/nrow(dsHC)

table(dsHC$Company.Size)
table(dsHC$Company.Size)/nrow(dsHC)

table(dsHC$Company.Age)
table(dsHC$Company.Age)/nrow(dsHC)

table(dsHC$Tenure2)
table(dsHC$Tenure2)/nrow(dsHC)

####Look at combined dataset for CC and HC BEFORE PSM####

ds <-
  read.table("CHCulturesSimple.csv",
             header=TRUE, sep=",", na.strings="NA", dec=".",
             strip.white=TRUE)
ds<-subset(ds,(DomCult==1 | ds$DomCult==4))
nrow(ds)

####Create a subset with the variables of interest
describe(subset(ds,select=c(CVF1_CC1:CVF2_HC6)))

table(ds$Gender)
table(ds$Gender)/nrow(ds)

table(ds$Age)
table(ds$Age)/nrow(ds)

table(ds$Race)
table(ds$Race)/nrow(ds)

table(ds$Edu)
table(ds$Edu)/nrow(ds)

table(ds$Company.Size)
table(ds$Company.Size)/nrow(ds)
```

## Appendix F. Continued

```
#####
###Compare groups via correlation matrix          #
###Data is output from genetic PSM after statistical assumptions  #
#####

#####Look at combined dataset for CC and HC#####
ds <-
  read.table("CHCulturesPSMOutlierRemoved.csv",
             header=TRUE, sep=",", na.strings="NA", dec=".",
             strip.white=TRUE)
#names(ds)

##### Recalculate scales using outlier removed file and excluding Removed SD
Items #####
#####Create scales scores for IM
ds$IM<-apply(subset(ds,select=c("IM1R","IM3","IM9")),1,mean)

describe(ds)

##### Save data file for Pooled Sample
write.csv(ds,"CHCulturesPSMOutlierRemoved.csv",row.names=FALSE)

##### Make the Clan Culture Sample
nrow(ds)
dsclan<-subset(ds,DomCult2==1)
nrow(dsclan)
describe(dsclan)
##### Save data separate file for CC
write.csv(dsclan,"CCulturesPSMOutlierRemoved.csv",row.names=FALSE)

##### Make the Hierarchy Culture Sample
nrow(ds)
dshierarchy<-subset(ds,DomCult2==0)
nrow(dshierarchy)
describe(dshierarchy)
##### Save data separate file for HC
write.csv(dsclan,"HCulturesPSMOutlierRemoved.csv",row.names=FALSE)
```

## Appendix F. Continued

```
### Examine bivariate correlation matrix for Pooled Sample
ds<-subset(ds,select=c("UPB_T2","OC_AC","IM"))
(corm<-cor(ds))
(dstat<-describe(ds))
(dstab<-rbind(corm,M=dstat$mean))
(dstab<-rbind(dstab,SD=dstat$sd))
(dstab<-rbind(dstab,n=dstat$n))
alpha(ds)

###Examine bivariate correlation matrix for Clan Culture
scc<-subset(dsclan,select=c("UPB2","OC_AC","IM"))
(corm<-cor(scc))
(dstat<-describe(scc))
(dstab<-rbind(corm,M=dstat$mean))
(dstab<-rbind(dstab,SD=dstat$sd))
(dstab<-rbind(dstab,n=dstat$n))
alpha(scc)

###Examine bivariate correlation matrix for Hierarchy Culture
sch<-subset(dshierarchy,select=c("UPB2","OC_AC","IM"))
(corm<-cor(sch))
(dstat<-describe(sch))
(dstab<-rbind(corm,M=dstat$mean))
(dstab<-rbind(dstab,SD=dstat$sd))
(dstab<-rbind(dstab,n=dstat$n))
alpha(sch)

###Correlation Matrix for Pooled Sample without scale scores
ds<-
subset(ds,select=c(UPB1,UPB2,UPB3,UPB4,UPB5,UPB6,AC1,AC2,AC3R,AC4R,AC5,
AC6R,IM1R,IM2,IM3,IM4R,IM5,IM6R,IM7R,IM8R,IM9,IM10,G,T))
(corm<-cor(ds))
(dstat<-describe(ds))
(dstab<-rbind(corm,M=dstat$mean))
(dstab<-rbind(dstab,SD=dstat$sd))
(dstab<-rbind(dstab,n=dstat$n))
alpha(ds)
```

## Appendix F. Continued

```
####Correlation Matrix for Clan Culture Sample without scale scores
scc<-
subset(dsclan,select=c(UPB1,UPB2,UPB3,UPB4,UPB5,UPB6,AC1,AC2,AC3R,AC4R,
AC5,AC6R,IM1R,IM2,IM3,IM4R,IM5,IM6R,IM7R,IM8R,IM9,IM10,G,T))
(corm<-cor(scc))
(dstat<-describe(scc))
(dstab<-rbind(corm,M=dstat$mean))
(dstab<-rbind(dstab,SD=dstat$sd))
(dstab<-rbind(dstab,n=dstat$n))
alpha(scc)

####Correlation Matrix for Hierachy Culture Sample without scale scores
sch<-
subset(dshierarchy,select=c(UPB1,UPB2,UPB3,UPB4,UPB5,UPB6,AC1,AC2,AC3R,A
C4R,AC5,AC6R,IM1R,IM2,IM3,IM4R,IM5,IM6R,IM7R,IM8R,IM9,IM10,G,T))
(corm<-cor(sch))
(dstat<-describe(sch))
(dstab<-rbind(corm,M=dstat$mean))
(dstab<-rbind(dstab,SD=dstat$sd))
(dstab<-rbind(dstab,n=dstat$n))
alpha(sch)
```