

UNIVERSITY OF OKLAHOMA  
GRADUATE COLLEGE

LEADING BETWIXT AND BETWEEN: THE DEVELOPMENT OF A LIMINAL  
LEADERSHIP SCALE

A DISSERTATION

SUBMITTED TO THE GRADUATE FACULTY

in partial fulfilment of the requirements for the

Degree of

DOCTOR OF PHILOSOPHY

By

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Norman, Oklahoma  
2020

LEADING BETWIXT AND BETWEEN: THE DEVELOPMENT OF A LIMINAL  
LEADERSHIP SCALE

A DISSERTATION APPROVED FOR THE  
DEPARTMENT OF EDUCATIONAL LEADERSHIP AND POLICY STUDIES

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## **Dedication**

This research is dedicated to my husband, Bill VanBuskirk, for my girls, Britton and Brennan, and in memory of my parents, Les and Sarah Gertrude Shaw. You are my inspiration.

## Acknowledgement

There are many who have walked this journey with me. I am grateful to Dr. Kelly Damphousse who believed I could undertake doctoral work and walked the early days with me. The late Shannon Self, Brian Sullivan, Vickie, Loemker, MD, and Debbie Rodgers were willing to testify to their belief in my ability by recommending my admission to doctoral program and I am thankful for their support.

I would like to thank my committee chairman, Dr. Doo Hun Lim and the committee members, Dr. William Frick, Dr. Angela Urick, Dr. Junghwan Kim , and Dr. Rhonda Dean-Kyncl, for their guidance and support throughout this tedious process. A special thanks to Dr. Amy Goodin for your time and support in the data analysis process. I am very grateful.

In addition to my committee, I have had the incredible opportunity to be mentored by Dr. Michelle Eodice and Dr. Rhonda Dean-Kyncl. I wish every person had the strength of these individuals in their corner. They have made me a stronger person, instilled the belief I could overcome the many obstacles of this journey, and cheered me to the victory line.

I am grateful to Dr. Sondra Petty, my first friend of this doctoral journey. We met while serving as Editorial Assistants for Social Sciences Quarterly and she quickly took me under her wing. Her astute advice about the practicalities of the doctoral journey have served me well. Our friendship is a treasure this journey provided.

I would also like to express my appreciation to my late father, Leslie Britton Shaw, who taught me the value of education, and my late mother, Sarah Gertrude Shaw, who taught me it is never too late to begin anew. I also want to express deepest appreciation to my husband, Bill VanBuskirk, and our girls, Britton and Brennan, for their support and understanding during this doctoral study.

I would like to express my gratitude to my community of friends. I am blessed with many individuals who care, love, and support me. You are more like family than friends. Each one of you has provided strength and support to go the distance. God bless you all.

Finally, I would be remiss if I did not acknowledge my reliance on my Christian faith. My life verse, Luke 12:48, “To whom much is given, much will be required” applies to this experience in multiple avenues. I have been given much through this doctoral experience. Also, much has been required. Moving into the next chapter of my life, I hope the requirement manifests in the encouragement and betterment of my fellow human beings.

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## **Abstract**

Liminal Leadership is a new, adaptive leadership paradigm (Shaw-VanBuskirk, Lim, & Jeong, 2019). Liminal is a Latin word that means at a threshold or boundary; betwixt or between spaces. Liminal Leadership occurs when an individual leads ‘betwixt or between’ work units, culture, ethnicities, languages, generations, nations, time zones, and labor laws. Liminal Leadership is unique in that it seeks to articulate the extrinsic and intrinsic characteristics of those who lead in liminality.

While liminality, used in the anthropological sense, is a temporary state between two thresholds (Hawkins & Edwards, 2015; Turner, 1969), organizational literature has now show that it is an ongoing or permanent state in many organizations (Cunha & Cabral-Cardos, 2006; Lindsay, 2010). This calls for individuals who can navigate the ambiguity of constant transition that exists in these organizations. It also heightens the need for the research undertaken to identify the characteristics in those individuals who can lead in these situations.

The Liminal Leadership model was developed following an exhaustive, integrated literature review. Liminal Leadership was compared with other leadership models which bore similarities. From this comparison, a framework of characteristics was developed that organized into four dimensions; adaptive, directive, relational, and intrinsic.

The Liminal Leadership Scale was developed utilizing a 43-item survey distributed via email, social media platforms, and mTurk. Two samples were drawn. Exploratory factor analysis was used on the first sample and Confirmatory factor analysis on the second sample. Additionally, correlation analysis was completed to look at the impact culture, generational affiliation, and educational background would have on the data. The final result is validation of a 43-item instrument Liminal Leadership Scale.

# CHAPTER ONE

## Introduction

It is often said we live in a global community. The expansion of ideas, goods, and organizations across borders has expanded the possibilities of life for many (Knox, Conceicao, Sork, & Martin, 2015). People are more mobile, they communicate with each other differently, and how they choose to relate to one another varies across generation, culture, and ethnicity. Technology has closed the space and time between us and allows people to come together across distances once thought impossible.

However, there are challenges that come with the expansion of the global community and economy in which we live (DCR Workforce, 2015, para 2). Organizational structural norms have evolved with the times and it is now common to have work groups that cross-national boundaries, culture, language, generation and economic sectors (Bolman & Deal, 2008; Weick, 1976). Those who lead these organizations face new challenges in leading their followers to the goals of the organization. They must work through the liminal space created by the transitions within the organization and the teams they lead. These leaders must undertake the task of leading while working betwixt and between the transitions to achieve those goals (Orton & Withrow, 2015).

The changing shape of organizational structures has seen the norm evolve from the highly bureaucratic framework of Max Weber to the loosely tied webs of inclusion noted by Hegelson (Bolman & Deal, 2008). The social, political, and economic factors which affect organizational structuring are documented by Gumport (2000). The current trend in organizational structures began with the documentation of loosely coupled systems by Weick (1976). Once a trend is noted within an organizational sector, isomorphism may result which

would expand the structural use (DiMaggio & Powell, 1983). In the current trend of organizational structure the goal of the organization must still be achieved, but the means of accomplishing that goal has been altered. Leaders of these organizations operate between the distinctive and often shifting groups to coordinate activities betwixt them in order to achieve organizational goals. This in-between, or betwixt, placement is described by the Latin term, liminal.

Leaders must learn to traverse the betwixtness of initial or transitional spaces in order to lead people effectively (Hawkins & Edwards, 2015). As previously stated, liminal is a Latin word that describes a state of betwixtness or betweenness. The Oxford Dictionary (2015) defines it as, “Relating to a transitional or initial stage of process or occupying a position at, or on both sides of, a boundary or threshold” (para 1). Loosely coupled systems are utilized with greater frequency. Within these systems the initial phase of forming the work team and the transitional spaces created by the variety of teams and their members results in increases in the incidence of liminality. Many leaders today must undertake leadership in a liminal state (Hawkins & Edwards, 2015). The idea of liminality is often associated with spiritual health (Orton & Withrow, 2015) and rites of passage (Hawkins & Edwards, 2015), but recently it has been used in organizational studies (Cunha & Cabral-Cardos, 2006). The term liminal leader is a relatively new leadership term that has only recently emerged.

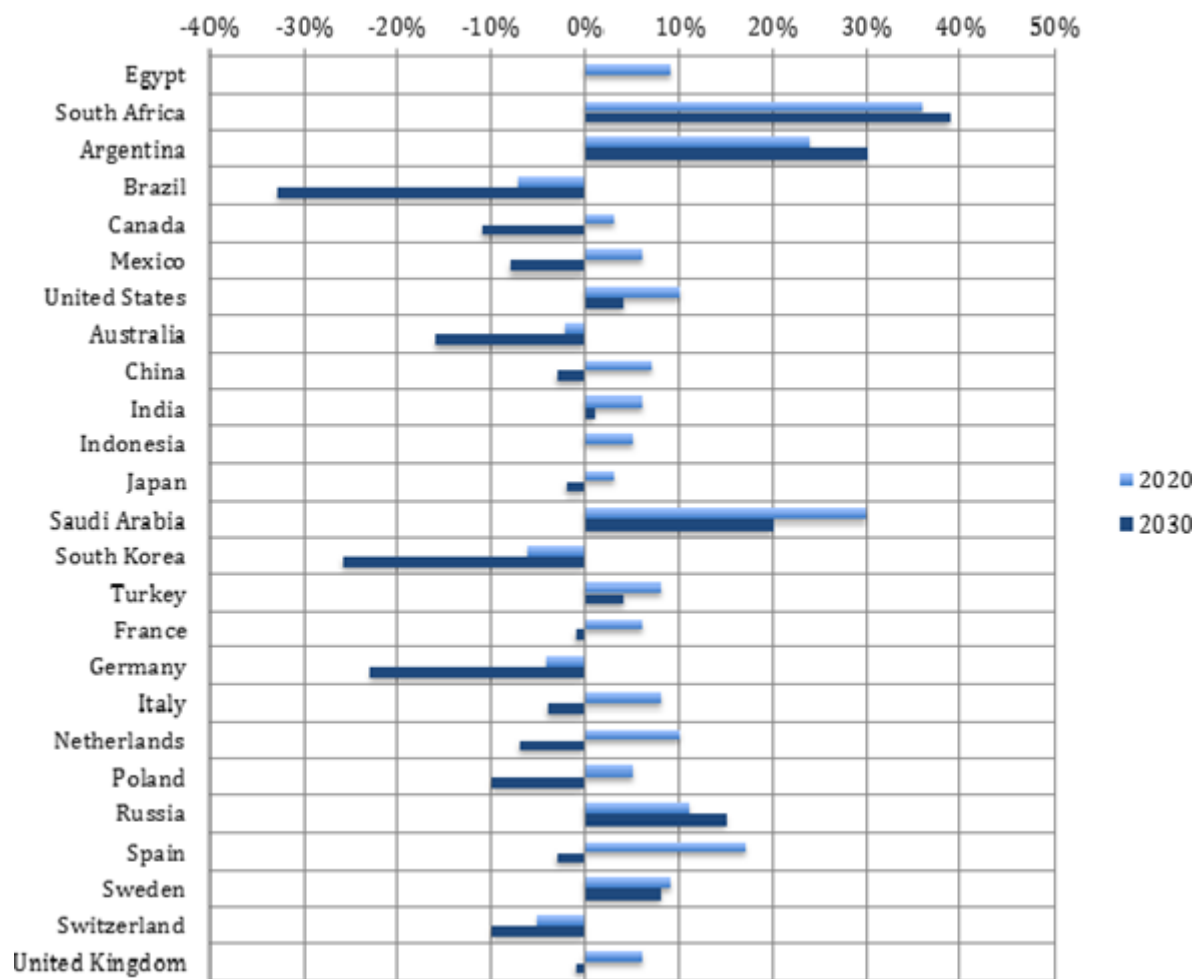
Liminal leaders frequently operate on shifting ground. Projections of shortages in the global labor market, as seen in Figure 1 on the following page, will increase the frequency of new teams being formed and increase the transitions that occur due to shifting labor markets in the areas most impacted by the shortages. This phenomenon exponentially increases the need for individuals who can lead people through these states. As the demand increases for liminal

leaders, it becomes imperative that it is understood what empowers individuals to lead through these states.

The culture created by a liminal state requires specific leader responses (Tempest, Barnatt, & Starkey, 2000). For example, in her research, Garsten outlines methods of coping with loosely tied organizational members and offers practical paths for connecting them to the organization (1999). Groups formed in this state often lack a common culture or language and the leader must create a cohesive team despite these challenges (Parent & MacIntosh, 2013).

**Figure 1**

*Labor Shortages/Surpluses Projected Worldwide (% of workforce)*



(DCR Workforce, para 2)



Individuals in liminal spaces often face learning challenges (Tempest & Starkey, 2004) and organizations are frequently forced to offer training programs that will increase cultural understanding between the various organizational members in order to boost harmony and workforce performance (Overfield, 1998). Liminal leading becomes more challenging when the groups are rarely, if ever, collocated. In this circumstance the leader is tasked with coalescing a work unit where the members do not share common language, values, cultural norms, motivations for being a part of the group (Orton & Withrow, 2015), or even time zones. Liminal leaders face the task of creating a cultural identity within a diverse workforce and maintaining that culture as the group members frequently change.

## **Background**

### **Organizational structure.**

Organizational structuring is impacted by social, political and economic factors (Gumport, 2000). The organizational structure norms have evolved from the highly bureaucratic framework of Max Weber (Shafritz, Ott, & Jang, 2005) to the webs of inclusion noted by Hegelson (as cited in Bolman & Deal, 2008) to the current trend of loosely coupled systems which were documented by Weick (1976). Isomorphism, which may occur after a trend is realized in an organizational sector, would increase the use of these organizational structures (DiMaggio & Powell, 1983). Thus, this trend would increase the liminal spaces which occur within loosely coupled systems and the work teams that comprise them. It also increases the need for liminal leaders.

Organizational goals remain constant in loosely coupled systems but the means of achieving those goals is altered by the formation and dissolution of teams within that system. In some circumstances the organizational goal requires the use of groups that are assembled for a

specific project and are then disbursed when the project is complete (Parent & MacIntosh, 2013). In organizations where loosely coupled systems are routinely used, a constant state of fluidity exists as work groups form and then disband (Weick, 1976). Leaders of these groups are in a constant state of betwixtness, or betweenness, of the interest, cultures, and norms of the various groups as they work together for a specified period of time, disassemble and reassemble in new groups (Orton & Withrow, 2015).

### **Liminality.**

Liminality was first used in anthropology and sociology. Anthropologists observed that many cultures incorporate rites of passages to signify an individual's transition from one place to another in their society (Turner, 1969). Native American tribes have rituals that denote the entrance into adulthood; Bar/Bat Mitzvah signifies the same in Judaism; and the Quincenera in the Hispanic community also celebrates the rite of passage to adulthood. This is a clear delineation of when the person moves from adolescence to adult status within their community. These rituals are community oriented and publicly mark the transition. The individuals who have been through the passage are then afforded the rights of their new status.

Sociologists have noted the ambiguity of achieving adulthood in some Western cultures where those rites of passage have been largely lost. The ceremonial rituals noted above do not have an equivalent to denote passage between childhood and adulthood in Western society. There are ages where certain privileges are granted such as a driver's license, voting rights, and high school graduation, but none carry the significance of an individual attaining adulthood and most are not obligatory. These privileges are largely gained through a private interaction with the government and do not carry the weight of community identification with the expansion of maturity. High school graduations may have, at one time, denoted adulthood, but, with delays in

younger generation entering the workforce, marrying, and having children, this too has become a less obvious rite of passage.

Liminality was introduced into the social sciences by Van Gennep (as cited by Cunha et al., 2010). As noted above, the social sciences find different applications of liminality across cultures. The expansion of the use then occurred within other areas of social science (Turner, 1969). Multiple studies have addressed various aspects of management and organizational liminality (Cunha & Cabral-Cardosa, 2006; Czarniawska & Mazza, 2003; Garsten, 1999; Hawkins & Edwards, 2013; Inkson et al., 2001; Rosen, 1988; Sturdy et al., 2006), and how organizations are impacted.

### **Leadership.**

Modern leadership theories focus more on individual interaction with followers and the personal development that takes place (Burns, 2003), but that has not always been the case. Great Man theories postulated that leadership was a naturally occurring attribute endowed at birth. Arguments against Great Man leadership theories moved the focus to the individual traits a person possessed that were useful in leading. Trait theories remained with the idea of natural endowment of certain traits or skills (Northouse, 2007). Behavior theories emerged as scholars searched for answers outside of the naturally occurring and these theories allowed for some behaviors to be developed within individuals that would allow their advancement to a leadership role (Gardner, 1995). This was a departure from the naturally endowed mindset and allowed for some leadership abilities to be fostered and nurtured that might not have been naturally occurring.

Transformative leadership began to move the focus of leadership from the success of the leader to the gain and good of the followers (Burns, 2003). Transformative leaders seek to pour

into the lives of their followers, encouraging growth within individuals and spurning the follower forward into leadership realms as well (Gerber, 2002). Recently, focus has shifted to servant leaders where focus is shifted away from process and outcome to people and what lies in the future (Thakore, 2013). This focus on personal development brings authentic leadership into the limelight and offers insight into leaders who are charged with moving their followers toward a self-actualized state (Aவில் & Gardner, 2005). This influence-based leadership theory contributes to the characteristics of a liminal leader. It is, however, only part of the characteristics noted by an integrative literature review.

### **Problem Statement**

The problem can be concisely stated as: Transitions will increase as a result of changing organizational structural norms and an expanding global economy. The demand for liminal leaders will continue to increase due to the factors listed: global culture, changes in organizational structural norms, and projected global labor shortages. As a result, liminal leadership will become more prevalent. In order to fill the gap for this type of leadership, it becomes imperative that an understanding is gained into the practices associated with this type of leadership and the factors that empowers an individual to lead groups through transition to the attainment of an organizational goal.

The consequences of having inadequately prepared individuals to assume these roles will impede the ability of organizations worldwide to effectively complete the missions for which they were established. As a consequence of the recent association of liminality with leadership, there is limited knowledge associated with it. The limited knowledge related to liminal leadership increases the need for additional information and also increases the value of the findings of this study (Davis, 2015). Therefore, an opportunity exists to build a foundation of

knowledge around the phenomenon of liminal leadership, which will strengthen the leaders, their organizations, and the organizational members they serve (Powley, 2013). It will also contribute the foundational knowledge of leadership theories from this point forward.

The opportunity of addressing the problem has a twofold gain. First, individuals can be identified that have a strong propensity to the attributes necessary in a liminal leader which would allow rapid entry into leadership in liminal spaces. Second, potential leaders can be evaluated for strengths and weaknesses in the identified attributes and then learning opportunities can be applied to fortify the weak areas.

### **Purpose Statement**

Due to the lack of understanding into leadership models that operate at the intersectionality of liminality and leadership, and the individuals who operate in that space, the purpose of this research is to develop a scale that would identify the extrinsic and intrinsic characteristics of individuals who lead in liminal spaces. The scale will follow a three-step format: item generation, scale refinement, and scale validation. An integrated literature review will allow for characteristics of liminal leaders to be drawn based from the attributes associated with leadership models that are similar in operation, context, and complexity with liminal leadership. The item generation will proceed with the development of survey questions before moving into scale refinement and validation.

### **Research Questions**

In order to examine the associations between liminal leadership and the outlined variables the following research questions should guide the study. First, how do liminal leaders lead? This research question will seek to identify the processes and behaviors the individual liminal leader employs in the effort to move followers toward the organizational mission. Therefore, the

focus is on external actions undertaken in those efforts. This research question would seek to confirm the conceptual model that displays the adaptive, directive, and relational characteristics that will be outlined in Table 2.

The second research focus may ask: How do liminal leaders think about leading?

This research question focuses on the intrinsic motivations of the liminal leader. The desire is to identify the mental, emotional, and spiritual values that guide the individual's actions. Insight into the intrinsic processes of these individuals will offer insight into the link between intrinsic process and extrinsic behavior in the final research question.

The final research thrust then can ask: What motivates liminal leaders to lead betwixt and between? Many seek to lead, but the purpose is to discover what empowers liminal leaders to live with the consistent state of ambiguity liminality brings to their leadership activities. This would seek to discover if they have experienced liminality personally that fostered a greater acceptance of ambiguity in their professional lives. Research questions two and three seek to confirm the characteristics of the Self-Leadership section on Table 2.

### **Significance of the Study**

The significance of this study is profound. As the need for liminal leadership grows, the need to recruit individuals with the abilities to lead in the ambiguous state where liminality exists grows exponentially. Therefore, an understanding of what constitutes a liminal leader is beneficial to those who seek to fill those roles in organizations. Barbuto (2005) speaks to the benefit, "If specific leadership styles are sought in organizations, some motivational profiling may prove conducive to selecting individuals who have a greater likelihood of displaying these behaviors" (p. 37).

A gap in the literature reviewed shows an insufficient amount of research devoted to leadership in change processes within organizations. House (1996) stated, “we still do not have theories of leadership as it relates specifically to major organizational change” (p. 333). Many years have passed since House’s statement, and, while his reflection stands, it is also acknowledged the added need to investigate the changes that have taken place in the types of organizational change processes. This leaves a gap in the research that is predictive of what lies ahead which brings us to the next gap.

An additional gap is found in the backward look to most research about leadership. Schmidt (2014) notes that leadership behavior will be altered by the changing structures, technologies, and social systems that are evolving and our research should be future based instead of considering what was effective in the past. Therefore, it is from a different paradigm this study will emerge. Paradigms allow researchers to begin their investigations from a foundational base of knowledge. This research will be undertaken with the historical foundations of leadership theory and organizational structure, but, with the forward looking foundation that leadership is inherently altered by the global culture, the evolution of technology that allows teams to operate without being co-located, and the increasing labor shortages in many parts of the world. Liminal leadership is possibly the new paradigm for modern leadership theories and research should be rigorously advanced to more completely understand the paradigm shift in leadership that has, and is still, occurring in the present day.

The largest gap in leadership theory in regard to liminal leadership is the need to address multiple foci. Leadership theory has a singular focus. Liminality requires a plurality. There is a lack of research that would open the door to consider aspects of all other theories of leadership whether they be intrinsic motivations or external actions. In a recent article, “Shut Up and Sit

Down: Why the Leadership Industry Rules” in *The New Yorker*, the author (Rothman, 2016) noted that leadership theory has varied in thought and focus over time. He suggests that alternative ways of looking at leadership may be useful that would incorporate a holistic approach to the idea of leadership. The research to be undertaken will allow a more holistic view into individuals who lead liminally and into the future of leadership itself.

The academic world has also noted the need for a holistic approach to leadership research, stating that much of leadership theory fails to address the complex interplay between interacting forces as the context for leadership to emerge (Uhl-Bien et al., 2007). It has been noted that the complexity field has not been substantively researched, but this field should be undertaken if leadership in complex situations is to be better understood and advanced beyond the conceptual ideas present today (Avolio et al., 2009). While this research does not address complexity theory, it does utilize the idea that organizational life occurs in increasing complex spaces and leaders must be prepared to lead in those spaces.

Liminal Leadership is an adaptive model of leadership. It requires the leader to adapt to the betwixtness and betweenness created by various factors. As such, Liminal Leadership should also be rigorously researched to begin the process of understanding and explaining the leadership nuances necessary for leaders to be effective in their respective organizations. It is from this base Liminal Leadership is to be investigated. At this time, no study can be found that incorporates the parts of many into a functioning paradigm for liminal leaders. However, the swiftly changing leadership culture brought forward by the twenty-first century demands of a global community accelerates the need for an adaptive leadership paradigm which the researcher believes Liminal Leadership fills.



## **Limitations**

This study has several limitations that prevent it from being generalized to all leadership positions. The primary limitation will be the narrow scope of a paradigm that seeks to look at individual leaders in a holistic frame. While this study will cover four domains, it is not comprehensive to the totality of possible attributes. Further studies will need to be conducted to include and exclude other possible attributes with liminal leaders.

The second limitation would be the Westernized perspective of the researcher. Liminality occurs across borders, races, and ethnicities, and possibly, operates from a different world view than the researcher. While the researcher will make all attempts to check and note researcher bias, the psychometric instruments used for this study may have an inherent bias to the Western perspective.

The third limitation is the utilization of a survey to collect data. The questionnaire will be closed-format, which will limit the responses allowed. Therefore, respondents may respond in a manner that does not accurately reflect their beliefs, opinions, or actions but is the only option open to them. It also allows the possibility of respondents not responding to the survey as a whole, but, rather, only answering the questions they believe offer a response which reflects their views. There is also the possibility of biased answers based on what the respondents believe would be the socially acceptable response.

Finally, while this study attempts to incorporate diverse perspectives of leadership theories to explain the core concept of liminal leadership, it is not without limitations. The notion of liminal leadership is emerging; scarce studies have been conducted to investigate the concept of liminal leadership. Therefore, our approach to compose the theoretical background of liminal leadership is limited. The researcher drew a logical framework of leadership components

a liminal leader might utilize from the chosen leadership theories. Each theory had some kinship to liminal leadership and was chosen for their likeness in some fashion. However, the comparative analysis of the relationship between liminal leadership and other leadership theories is limited due to the conceptually based nature of analysis. The proposed model of liminal leadership is tentative and conceptual in nature. Further investigation is needed to verify the psychometric structure and reliability of the model through additional empirical studies and to further our understanding of liminal leaders.

### **Operational Definitions**

#### **Liminal**

Liminal refers to the condition of being betwixt and between; a transitional state; between thresholds or boundaries (Tempest & Starkey, 2004).

#### **Leadership**

The artful process whereby an individual influences a group of individuals or a community to achieve a common goal (Grint, 2010).

#### **Organizational Structure**

The framework by which it is determined how activities such as task allocation, collaborative efforts, and supervision are utilized to achieve the goals of the organization (Pugh, 1990).

#### **Paradigm**

A philosophical or theoretical framework that, for a time, provides guidance for the theories, research methods, and experimental standards used in support of them (Kuhn, 1990).

#### **Scale**

Measurement instruments use a group of items that can be combined for a composite score to reveal levels of theoretical variables that cannot be detected by direct observable means (DeVellis, 2003).

## **CHAPTER TWO**

### **Literature Review**

To clearly understand liminal leadership, a thorough understanding of the background and contributing factors to the situations that result in liminality occurring is necessary. As organizational structures have evolved to the systems that cause organizational liminality, leadership theory has evolved to be more ‘full range’ where focus is on the processes between leaders and followers, and contextual development for both to thrive (Zigurs, 2003). The growing need for liminal leaders is due to the intersectionality of evolving trends in organizational issues and leadership theory.

This review will begin by examining the meaning of liminality, the organizational issues that result in organizational liminality, and the simultaneous evolution of leadership theory. Then leadership theories that have some similarity to the contextual situation of liminal leadership will be surveyed to draw inferences that can be made concerning the characteristics and behaviors of liminal leaders. The final section will specify research gaps that have been discovered, the significance and purpose of further study, and the focused research questions that will advance our knowledge of liminal leadership.

### **Liminal Leadership**

#### **Liminality**

Liminal is a Latin word that describes a state of betwixtness or betweenness. The Oxford Dictionary (2015) defines it as, “Relating to a transitional or initial state or process or occupying a position at, or on both sides of, a boundary or threshold” (para 1). Various authors have adapted the definition of liminal over time. It could be described as a paradoxical state (Cunha

& Cabral-Cardoso, 2006), an ambiguous condition (Tempest & Starkey, 2004), and amalgamates distinctions (Turner, 1969).

Liminal has its origins in Anthropology. Ethnography undertaken by anthropologist revealed evidence that many cultures undertook rites of passages to indicate an individual's transition from one status to another (Turner, 1969). It has been chronicled by sociologists that Western cultures do not broadly observe these rites of passage which often cause ambiguity as to when an individual has achieved adulthood. It was introduced into the social sciences by van Gennep (as cited by Cunha, Guimarães-Costa, Rego, & Clegg, 2010), formulized into phases in rites of passage (Hawkins & Edwards, 2015; Turner, 1969), associated with spiritual health (Orton & Withrow, 2015), and more recently applied to organizational studies (Cunha & Cabral-Cardos, 2006; Lindsay, 2010). Multiple studies have spoken to aspects of management and organizational liminality (Cunha & Cabral-Cardosa, 2006; Czarniawska & Mazza, 2003; Garsten, 1999; Hawkins & Edwards, 2013; Inkson et al., 2001; Rosen, 1988; Sturdy et al., 2006). It is the recent application of liminality to organizations that draws the focus of this research study.

### **Organizational Contributions to Liminality**

The evolution of organizational structure has provided the opportunity for organizational liminality to occur more frequently. The type of structuring an organization undertakes is impacted by political, social, and economic factors (Gumpert, 2000). The highly bureaucratic framework of Weber (Shafritz, Ott, & Jang, 2005) has given way to the webs of inclusion noted by Hegelson (as cited in Bolman & Deal, 2008), and the structure was further flattened to the loosely coupled systems seen in existence today (Weick, 1976). Once a trend is recognized in an organizational sector, isomorphism would increase the use of that particular structure (DiMaggio

& Powell, 1983). The increased use of flattened organizational structures and systems that encourage loosely tied work units contribute to the increases in organizational liminality. The idea of organizational liminality was proposed by Lindsay (2010) which he describes as, “the tendency of certain organizations to creatively combine institutional and anti-institutional elements” (p. 165).

In organizations that employ loosely coupled systems the organizational mission remains the same but the means of achieving the goals are changed. In some cases, this would require the use of specially created work units to complete a project and then the work group is disbanded (Parent & MacIntosh, 2013). When loosely coupled systems are regularly utilized in an organizational setting, a consistent state of fluidity is observed as work units are assembled and disassembled as specific project needs require their service (Weick 1976). The leaders of these work units find themselves in an ongoing state of liminality; they exist in a constant state of betweenness of the cultures, interests, and norms of the groups they work with for a time before they disband and reassemble into new work units (Orton & Withrow, 2015).

Organizational structuring has been a primary factor in the occurrence of organizational liminality but there are other considerations as well. If projections of global labor shortages prove correct, the migration of workers across national boundaries will dramatically increase (DCR Workforce, 2015). This labor force movement will create liminal spaces in two ways. First, the formation and dissolution of teams will increase. Secondly, the mix of multiple cultures will place the leader of the work units betwixt the differing values, ethics, and languages that are encountered in a multi-ethnic group.

A related issue to the movement of workers across national boundaries is the differentiation in law. Cunha and Cabral-Cardoso (2006) speak to the liminality created when

organization legality and illegality is examined based on rules that are the basis of organizational life. When the situation calls for some alteration in the rules, it places the leader in a liminal state of being between the formal bonds of the organization and the looser interpretation necessary for the situation. Organizational liminality often occurs as organizations define what is acceptable, legal, illegal, and necessary (Daft & Weick, 1984; Lindsay, 2010). When leaders encounter work units that transcend national boundaries, they encounter work laws that differ between nations, which provides opportunity for interpretations of rules to, “be amplified when the process of interpreting involves several organizations with different cultures and with multiple definitions of what is acceptable and what is not” (Cunha & Cabral-Cardoso, 2006, p. 219).

### **Generational Differences Contributing to Liminality**

Organizational liminality also occurs due to changing employment practices (Harvey, 1989 as quoted by Tempest & Starkey, 2004). Individuals seek to attach to an organization to enhance their ‘career capital’ (Arthur, Inkson, & Pringle, 1999). Their tenure with the organization broadens their skill set while they are contributing unique knowledge to the organization (Tempest & Starkey, 2004). Cohen and Prusak (2001) contend that it is social capital that unifies members and promotes cooperation among the group. Social capital is developed from relationships built on trust and behavioral norms which in turn promotes a culture of reciprocity (Putnam, 1995).

The organizational liminality that is a result of changing employment practices can be viewed through the lens of generational differences that drive a portion of this change. Today’s workforce spans five generations. Each generation holds different values, dreams, desires, motivations, styles of working, and work ethics (Bennett, Pitt, & Price, 2012). New generations

enter the workforce every ten to fifteen years, but this is the first time five generations have occupied the workforce simultaneously (Bennett et al., 2012).

The fourth generation, dubbed the Millennials, is unique with a more global perspective (Glass, 2007). The generations have different preferences in communication, technology, learning, expectations, benefit packages, recognition, and leadership styles (Haeberle, Herzberg, & Hobbs, 2009). The unique attribute of a global perspective adds additional conflict, “clashes are inevitable as Generation Y mixes with its predecessors” (Sujansky, 2004, p. 16). The changing dynamics result in a new aspect to workplace diversity (Kapoor & Solomon, 2011; Sujansky, 2004) which causes friction, reduced productivity, alienation, low morale, job dissatisfaction, absences, and high turnover rates (Bennett et al., 2012).

The advent of this unique phenomenon of having four, and soon five, generations in the workplace simultaneously can be attributed to several factors such as longer life expectancy and a need to remain in the workforce due to economic pressures caused by recession. This results in the present state of multigenerational workplaces. It is thought that a suitable model to manage this phenomenon at a strategy level does not currently exist within organizations (Bennett et al., 2012).

Each generation has different expectations of their work life. Traditionalist and Boomers often see employment as a life-long attachment to the organization. Gen Xers do not share that view and Millennials are much more likely than other generations to leave a job if they are not happy with their role or the expectations placed upon them by the organization (Merrick, 2016). The Millennial perspectives on organizational boundaries differ which often results in opposing views on their long-term association with the organization and thus their willingness to endure



work that interferes with their private life (Phin, 2012). Despite these differences, all generations want to find meaning in their careers (Merrick, 2016).

High turnover rates are a primary concern in multigenerational workplaces (Bennett et al., 2012). The willingness of Gen Xers and Millennials to leave employment they dislike magnifies the problem (Merrick, 2016). Consequently, organizations risk becoming devoid of individuals available to develop necessary succession plans (Haeberle et al., 2009). It also decreases ‘social capital’ and challenges the cohesion of work units. In fact, the loss of social capital contributes to the liminal state of many work units as team members join and leave the team at various times. High turnover rates negatively impact knowledge management, preventing long term relationships between the generations required for the transmission of knowledge (Merrick, 2016).

Retention of knowledge is a profound concern in a multigenerational workplace (Bennett et al., 2012). When the generations fail to communicate, key organizational knowledge is not transferred and the risk of it being lost is very real. Technology can capture some of the knowledge but, “older staff will still hold important corporate, company and market specific knowledge, which will be crucial to success for the millennials who succeed them” (Merrick, 2016).

### ***Generational characteristics***

It will assist understanding of the complexity of this issue to briefly note the contrasts between the generations. Generational differences occur as a result of the state of the world in which the individuals were raised. Significant global events impact how individuals view the world and identify the generations. Generations are increasingly smaller in date range due to the rapid expansion of technology and the contextual changes that brings to life (Hope, 2016). It is

important to note two points in reference to the generalities associated with generations. First, people born during generational transitions can adopt characteristics of either generation or a blend of both generations. Second, people are individuals, so the characteristics associated with the generations are not universally noted (Kapoor & Solomon, 2011).

While the exact dates of the generational divides are debated, there are some agreed upon norms. The oldest generation is known as the Traditionalists, or the Silent Generation. They were generally believed to have been born between 1925-1945. Baby Boomers came next; it is believed they were born in the years between 1946-1964. Generation X, or Gen Xers, were born in the years spanning 1965-1980. Generation Y, or the Millennials as they have come to be popularly known, were born after 1980 but the other end of the spectrum is under debate with Phin (2012) offering the earliest date of 1990. The fifth generation, which is now beginning to enter the workplace, is Generation Z (Bennett et al., 2012; Glass, 2007; Kapoor & Solomon, 2011; Sujansky, 2004).

**Traditionalists.** Traditionalists have several life events of great magnitude that formed their view of the world. They endured poverty caused by the Great Depression (Kapoor & Solomon, 2011), lived with the effects of World War II and the Korean War, and worked in the industrial economy when the United States dominated. Their families were large (Phin, 2012) and class systems were still in place. Train travel was the norm (Bennett et al., 2012). Due to these experiences, they tend to place more value on the group than the individual (Kapoor & Solomon, 2011). They generally exhibit the characteristics of, “dedication sacrifice, conformity, respect, hierarchy, patience, and duty before pleasure” (Bennett et al., 2012, p.281). While they are generally not associated with high rates of technological knowledge, those that do engage with technology are the fastest growing group of internet users (Kapoor & Solomon, 2011).

**Baby Boomers.** Baby Boomers also had several key events that shaped their lives. They came of age during the civil rights era, Woodstock (Kapoor & Solomon, 2011), the rise and assassination of John F. Kennedy. During their formative years rock 'n roll and the Beatles changed music, television became common place, and they had reliable access to contraception (Bennett et al., 2012). The rapid rise of wealth led to a housing boom and suburban life became the norm (Phin, 2012). The prosperity they have known has caused them to be identified by their custom to 'live to work' (Gursoy, Maier, & Chi, 2008). Typically, optimistic and focused on self, Baby Boomers are concerned with health and well-being which results in a feeling of eternal youthfulness (Bennett et al., 2012; Kapoor & Solomon, 2011). They are characterized as steady, powerful, controlling (Phin, 2012), and excellent networkers (Kapoor & Solomon, 2011). Technology has been embraced by Boomers and is actively used in all aspects of life (Kapoor & Solomon, 2011).

**Generation X, or Gen Xers.** Generation X or Gen Xers also had their share of major events. The effects of the Cold War and the Iran-Kuwait conflicts left them in a state of uncertainty (Kapoor & Solomon, 2011). They were the first latchkey kids due to the prevalence of two career households and rising divorce rates (Phin, 2012). The world saw a surge of media and technology, rock music became the norm, inner cities were revived, and car travel was the norm during their formative years (Bennett et al., 2012; Phin, 2012). The impact of these factors has resulted in Gen Xers being self-reliant, global thinkers, independent, reluctant to work on teams (Kapoor & Solomon, 2011), skeptical, impatient, critical, and focused on results over process (Bennet et al., 2012), which results in an innovative spirit (Phin, 2012). Gen Xers lived with parental lay-offs and, as a result, display a lack of respect for company rules. Work-life

balance is crucial, and they will not sacrifice their personal life for work (Kapoor & Solomon, 2011). They are quite comfortable with technology.

**Generation Y , or The Millennials.** Generation Y is sometimes referred to as the Echo Boom because of their similarities to the Baby Boomers (Kapoor & Solomon, 2011), but are more commonly known as the Millennials. The first Millennials born in 1980, but the end of this era is a source of debate with dates ranging from 1990 (Phin, 2012), to 1994 (Sujansky, 2004), to 1999 (Kapoor & Solomon, 2011), and even 2000 (Spiro, 2006). The events that shaped their worldview include the Oklahoma City bombing, Columbine shooting (Sujansky, 2004), and September 11th (Phin, 2012).

Millennials have a different appearance than previous generations with tattoos, piercings, gages, and constant electronic accessories (Kapoor & Solomon, 2011). They are also technologically savvy, more affluent, well educated, and as a group, are more ethnically diverse than other generations (Spiro, 2006). They display great enthusiasm, confidence, multi-tasking abilities, and a strong desire to learn. They are often referred to as either nurtured (Bennett et al., 2012) or coddled (Phin, 2012).

Millennials take longer to make a stable career choice, enter into lifetime relationships (Spiro, 2006), and many still live at home with their parents (Phin, 2012). Cheap air travel has opened the world to their explorations (Bennet et al., 2012). As “digital natives” (Bennett, Maton, & Kervin, 2008) they embrace technology. They communicate via social networking, text messaging, and expect instant feedback (Kapoor & Solomon, 2011).

**Generation Z.** The fifth generation, who are now beginning to enter the workplace, is Generation Z. Hope (2016) promotes a date range for their birth between 1995 and 2010. The oldest of Generation Z had just entered school when 9/11 occurred. As a generation, they have

never known a world that was not filled with terrorism and danger. The added dimension of cyberbullying leaves them vulnerable in their own homes (Hope, 2016).

Generation Z members are strongly motivated by relationships. They have strong relationships with their parents, with 69% citing parents as their role models. They have stronger religious and spiritual convictions than the Millennials, Gen Xers, and Boomers. Their concern for people extends to issues of gender and racial equality. Politically, they are socially liberal and economically conservative. The conservative economics carries over into their personal finances as well (Hope, 2016). In many ways they can be considered ‘old souls.’

This generation can be seen as constantly connected for fear of missing something (Hope, 2016). However, they do not prefer teamwork as do the Millennials (Kapoor & Solomon, 2011), often preferring to work independently (Hope, 2016). While the Millennials were ‘digital natives’ (Bennett et al., 2008) and considered to be technologically savvy (Kapoor & Solomon, 2011), Generation Z can be described as technologically integrated (Hope, 2016).

### **Structural Contributions to Generational Strife and Resulting Liminality**

The structure of organizations plays a role in the difficulties within a multigenerational workforce. Hierarchical models squelch the relationships and collaborations preferred by younger generations. It also removes older leaders to corner offices that are the antithesis of relational leadership. Additionally, the training methods of these types of organizations do not reflect the divergence of learning styles in the workforce today (Merrick, 2016). Behrens (2009) explains the difficulty in this way, “Most workplaces, quite frankly, are not designed to integrate the needs and preconceptions of successive generations of employees, each of which acts quite differently from its predecessors. The more wedded the workplace is to traditional organization

models (with their rigid vertical hierarchies) and training programs (with their school solutions to every problem), the tougher the task will be” (p. 21).

The recent economic downturn has caused companies to downsize. This has resulted in a ‘war of talents’ that places individuals from different generations in competition to retain their positions (Bennett et al., 2012). The knowledge of Traditionalists and Boomers is compared to the technological skill set of the Millennials, causing tension between them and creating negative competition to display their value to the organization. These conditions produce an adversarial culture between generations. The effects of the downturn were not only felt by organizations; it has also forced many older workers to remain in the workforce longer than planned. When the impact of the recession was felt in private investment accounts, many individuals delayed retirement (Haeberle et al., 2009).

It was not only the economic recession that caused workers to remain in the workforce longer. Longer life spans meant that people desired to work beyond previous retirement ages. Advances in medicine, better nutrition, and other factors have increased the ability of many older workers to remain healthy (Bennett et al., 2012). Boomers are noted for their ‘live to work’ (Kapoor & Solomon, 2011) mantra and often find retirement less than appealing.

### **Cultural Differences Contributing to Liminality**

Culture can be described many ways. Schein (1992) states that culture is, “a pattern of shared basic assumptions that a group learned as it solved its problems of external adaptation and 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 relations to those problems” (p 12).

Deal and Kennedy (1982) offer a more succinct definition as, “the way we do things around

here” (p 4). Culture could also be defined as the unwritten rules of how things differ from one group to another (Hofstede, 2001; Morgan, 2006).

Culture is built over time (Minkov, 2011). It is both a product and a process. The product is wisdom gained through practice. The process is the renewal as new group members come in, learn the way, and then teach them to others (Bolman & Deal, 2008). Symbolic tools are used to communicate, build, and express culture. These tools include myths (Campbell & Moyers, 2011), values (Bolman & Deal, 2008), vision (Collins & Porras, 1994), stories (Clark, 2004), heroes and heroines (Hoy, 1990), rituals (Manley, 1998), ceremonies (Deal & Key, 1998), play (Kidder, 1981), and artifacts (Bolman & Deal, 2008).

### ***Hofstede’s cultural dimensions***

The impact of national culture in the workplace as a formalized concept was pioneered by Geert Hofstede. Hofstede’s work used a survey to collect data from workers and managers from 40 different countries within the IBM organization. His use of empirical data allowed him identify variables that he developed into cultural dimensions. These surveys lead Hofstede to formulate four dimensions (Hofstede, 1980). Subsequent work, completed by Michael Harris Bond who surveyed students in 23 countries, lead Hofstede to add a fifth dimension (Hofstede, 2001). The sixth dimension was added following the World Values Survey undertaken by Michael Minkov (Minkov & Hofstede, 2012). While subsequent studies have altered the variables, his work remains the most cited in literature.

**Power distance index (PDI).** Power distance refers to the measure of inequality between leaders and followers. Countries with high power distance often display autocratic relationships, while those with low power distance show more democratic exchanges (Hofstede, 2001).

**Individualism versus collectivism (IDV).** In individualistic countries the emphasis is on autonomy and self-reliance. Collectivist countries emphasize loyalty to the group (Hofstede, 2001).

**Uncertainty avoidance (UAI).** This dimension measures the level of comfort individuals have with uncertainty and ambiguity. Those countries that measure high on this dimension display higher levels of centralized control. Those countries that measure low show a propensity for risk-taking (Hofstede, 1980).

**Masculinity versus femininity (MAS).** This measure examines the degree to which a country values assertiveness versus nurturing. Countries displaying masculinity often have a higher rate of men in stressful, ambitious jobs. Countries low in masculinity show opposite tendencies (Hofstede, 1980).

**Long-term orientation versus short-term orientation (LTO).** This dimension measures the connection to the past versus an adaptable, future orientation. Countries high on this dimension value pragmatic, adaptable action as necessary. Countries which measure low, or in the short-term orientation, value tradition and time-honored values (Hofstede, 2001).

**Indulgence versus restraint (IND).** The degree of freedom citizens are given to pursue their individual desires is the continuum measured in this dimension. Those countries measuring high allow individuals noticeable indulgences in their pursuit of enjoying life. Those that favor restraint regulate gratification of individual desires through strict social norms (Minkov & Hofstede, 2012).

Hofstede's research is widely acclaimed largely because he employed sound scientific principles in his research. He found measurable elements of culture; these differ from the symbolic tools of culture that are more elusive to evaluation (Minkov, 2011). Minkov (2011)



lists the elements of measurable culture to be: values, what is important in people's live; norms, views about how people should behave; beliefs, agreement or disagreement with certain statements; attitudes, what or whom people like or dislike; self-perceptions, how people describe themselves with adjectives or verbs; cognitive ability, measured through IQ or school tests; behaviors, analyzed through national statistics of certain risky behaviors; and stereotypes, asks people to provide a collective description of a certain group of people.

### **World Polity Theory**

World Polity Theory believes that culture is progressively global (Boli & Thomas, 1997). In this view the underlying national cultures take a secondary role to that of a distinct global culture. In this model, power remains in the individual states but the impact of the world culture is extensive, "world cultural principles and institutions shape the action of states, firms, individuals, and other subunits" (Boli & Thomas, 1997, p. 172). In fact, some sectors of world development find the state scarcely present at all.

McNeely (1995) argues that the trend to isomorphism has resulted in similar ideology and organizational structure in all types of countries, whether developed or in the process of developing. Jepperson (1992) notes, "people are canonically enacting models of collective life when opining." As individual social experience is exposed to a world culture, their opinions and patterns of behavior take on the collective tone. This collective tone is a result of the world cultural and organizational directives for development that exposes all people to the same forces and priorities (McNeely, 1995; Yang & Taylor, 2016).

### **Organizational Liminality as an On-Going State**

Lindsay (2010) also speaks to the ongoing liminal status of some organizations, "This liminality does not always represent a temporary phase of organization evolution, but rather an

intentional organizing strategy with unique resources and liabilities” (p. 164). Turner (1974) suggested that liminality is not always a temporary state when applied to modern movements; he states that they “try to create a *communitas* and a style of life that is permanently contained within liminality. ... Instead of the liminal being a passage, it seemed to be coming to be regarded as a state” (p. 261). When groups become more loosely tied to the organizational center, a state characterized by Cunha and Cabral-Cardoso (2006) as, “the global and the local,” (p. 218) liminality continues due to the innate differences between the two.

### **Leadership**

Modern leadership theories concentrate more on individual interaction with followers and their personal development (Burns, 2003) but, historically, that has not been the focus. Great Man theories claimed that leadership was naturally endowed at birth. Arguments against great man leadership theories transitioned the emphasis to the individual traits of a person that were useful in leading. However, trait theories also claimed that the traits were naturally endowed (Northouse, 2007).

Scholars began to search for attributes outside of the naturally endowed, which led to the emergence of behavior theories. Behavior theories postulated that some behaviors can be developed within individuals that would empower them to assume leadership roles (Gardner, 1995). This was a departure from the previous theories that focused on naturally endowed abilities and allowed more individuals to be considered for leadership status.

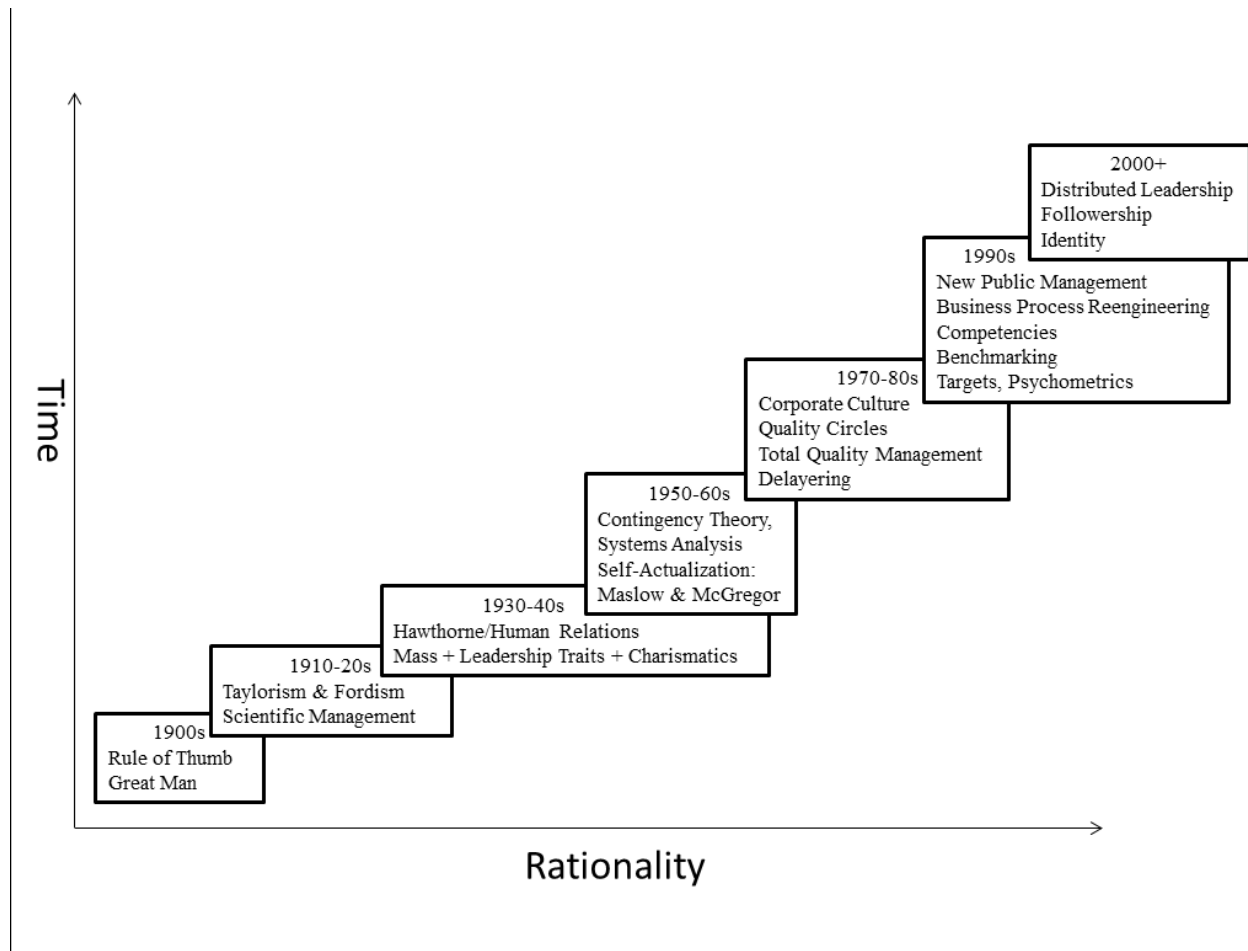
Transformative Leadership began the shift in leadership theory to focus on the gain and good of the follower instead of the leader (Burns, 2003). Transformative leaders invest in the lives of their followers, encouraging their personal growth and moving the follower forward into leadership positions too (Gerber, 2002). Recent trends have moved to servant leaders, where,

“The focus of leadership needs to be shifted from process and outcome to people and the future” (Thakore, 2013). This focus on personal development evolved and brought authentic leadership theories into consideration for many. Authentic Leadership theory offers insight into leaders who are focused on encouraging their followers toward a self-actualized state (Avolio & Gardner, 2005).

Leadership theories have evolved over time to be increasingly obtainable for all. Early theories such as Great Man excluded most individuals from leadership. However, as trait and behavior theories emerged it moved the thought to more inclusive theories. The recent trend toward development of followers to leadership characteristics offers the possibility of leadership to the greater masses through the rational application of training, mentoring, and coaching techniques. This progression is illustrated in Figure 2.

**Figure 2**

*Increasingly Rational Leadership Over Time*

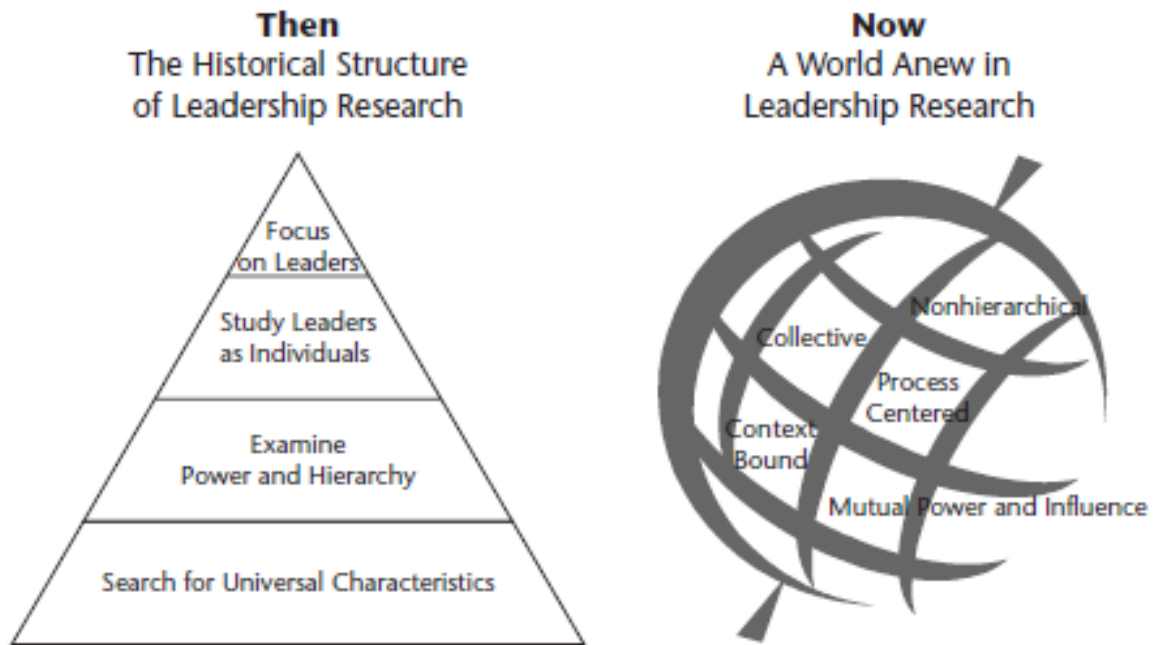


(Grint, 2010)

Leadership theory has also undergone structural changes in the last two decades as the trend shifted from the strong leader idea to one who encourages personal growth. Leadership has changed from hierarchical models to a model that is more collaborative and team-based that focuses on democratic processes. Leadership theory and leadership practice have evolved in a symbiotic process (Kezar, Carducci, & Contreras-McGavin, 2006). Figure 3 graphically illustrates the changes in both leadership theory and leadership practice.

### Figure 3

*The Revolution in Leadership Research*



(Kezar, Carducci, & Contreras-McGavin, 2006)

Komives (2010) succinctly states the process, “Moving away from hierarchical, author-based, context-free, highly structured, and value-neutral leadership frameworks, contemporary scholars have embraced context-specific, globalized, and process-oriented perspectives of leadership that emphasize empowerment, cross-cultural understanding, collaboration, cognitive complexity, and social responsibility for others” (p. 186). It could be argued that Liminal Leadership may be one of the first identifiable leadership models that reflect the changes noted above. It is from this perspective that Liminal Leadership is considered as a new paradigm in leadership thought.

### **Liminal Leadership**

The intersectionality of multiple changes in organizational issues such as structuring changes, global workforce demands, employment expectations, and the evolution of leadership theory have resulted in the need for liminal leaders. The idea of liminal leading is proposed in response to Lindsay’s idea of organizational liminality. If organizations are liminal at certain

points of operation, then leadership is needed in these circumstances. Lindsay's (2010) idea speaks to the areas in which liminality occurs near institutional overlaps, "where differing logics of action, members and resources are exchanged" (p. 165). The logic that results in organizational liminality can be applied to leading in liminality as well. Organizational members with differing backgrounds, culture, language, ties to the organization, and work location create an ongoing liminal state (Cunha & Cabral-Cardoso, 2006).

### **Liminal Leadership: Commonalities and Contrasts with Other Models**

The selection of leadership styles to compare and contrast with Liminal Leadership should focus on influence-based styles. Liminality creates spaces of ambiguity where control becomes challenging (Cunha & Cabral-Cardoso, 2006), thus negating the effectiveness of leadership styles that favor formal power structures. The selection of leadership theories studied was based on similarities to liminal leadership in leader and follower positionality, organizational issues, and the context in which leadership is applied.

#### ***Path-Goal leadership***

Path-Goal leadership has evolved over time, spurred other theories, and has ultimately remained under-researched (Schriesheim & Neider, 1996). It has been described as a dyadic theory of supervising (House, 1996), a functional approach to leadership (Schriesheim & Neider, 1996), a theory of task and person oriented supervisory behavior (House, 1996), and the reformulated theory is considered a theory of work unit empowerment by the theory's author (House, 1996). Northouse (2007) contends that Path-Goal theory is theoretically complex but also pragmatic (p. 133), which may be the reason Schriesheim and Neider (1996) quoted Miner when he stated, "path-goal theory...has a compelling logic to it that other theories have not achieved" (p.320). The causation of the lack of research on path-goal theory was attributed to

the fact that critical reviews of the theory made it difficult to publish research, the inherent appeal of the theory waned in light of new leadership approaches, and the theory had not been improved upon since it was first proposed in 1974 (Schriesheim & Neider, 1996). The original theorist, Robert J. House, published a reformulated Path-Goal theory shortly after Schriesheim and Neider's (1996) article noting the need for current research that was more methodologically sound and their view that path-goal continues to have value and should continue to be investigated (House, 1996).

Path-Goal leadership theory is, in the words of its founder, "the meta proposition that leaders to be effective, engage in behaviors that complement subordinates' environments and abilities in a manner that compensates for deficiencies and is instrumental to subordinate satisfaction and individual and work unit performance" (House, 1996). The early theory was encapsulated in four leader behaviors that were believed to be paramount to meeting the missing needs of the subordinates and motivating them to action. They were directive leadership, supportive leadership, participative leadership, and achievement-oriented leadership (Northouse, 2007). These behaviors were chosen by the leader based on the needs of the subordinates. It is this aspect of customizing leadership behavior toward followers that is similar in practice to the outlined needs of liminal leaders.

Directive leadership, or directive path-goal clarifying leader behaviors (House, 1996), requires the leader to define the expectations of the followers, the process of how the work is to be accomplished, and the time frame it should be completed (Northouse, 2007). It should reduce subordinate role ambiguity, clarify what constitutes successful goal attainment, and determine the extrinsic rewards given for attaining the goal. These actions provide psychological support for subordinates and clarify the actions expected of them (House, 1996).

Supportive leadership, or supportive leader behavior (House, 1996), is the human approach of leadership. The leader exhibiting this behavior will express an interest in the individual subordinate's needs, preferences and well-being. Friendly, approachable behavior by the leader creates an environment that makes work pleasant for the subordinates (Northouse, 2007). This was asserted to be a source of self-confidence, social satisfaction, stress reduction, and alleviation of frustration (House, 1996).

Participative leadership, or participative leader behavior (House, 1996), invites subordinates to express their ideas and opinions which are then incorporated in the decision-making process (Northouse, 2007). House (1996) asserts this has four effects; first, it clarifies path-goal relationships: second, increases congruence between subordinate and organizational goals; third, increases the autonomy and ability of the subordinate to perform their task; fourth, increases the pressure to perform by increasing the pressure applied by their peers (p. 327).

Achievement-Oriented leadership, or Achievement-Oriented behavior (House, 1996), is leadership behavior that exhorts the subordinates to perform at their highest possible standards (Northouse, 2007). This entails encouragement by the leader for the subordinate to set larger goals, perform at higher levels, and have more confidence in their ability to achieve these standards (House, 1996). In essence, this set of leader behaviors should motivate subordinates to believe more of themselves and in doing so, increase their ability to perform, thus achieving more for the organization.

Path-Goal theory was reformulated by its author and then referred to as a theory of work unit leadership (House, 1996). This theory outlined twenty-six propositions across ten classes of leader behaviors. These ten classes of behaviors are defined, suggestions are offered where they can be effectively exercised, and the conditions under which they will be most functional or



dysfunctional. The ten classes are Path-Goal clarifying behavior, achievement-oriented leader behavior, work facilitation, supportive leader behavior, interaction facilitation, group-oriented decision process, representation and networking, value-based leader behavior, and conditions for exercise of value-based leadership, and shared leadership (House, 1996). The expansion of the theory more fully embraces the complexities of its foundations. Interactions between leaders and followers is a complex act. The idea that leaders have the ability to engage in the full span of behaviors outlined is questionable, but House argues that some of the behaviors are interchangeable (p. 347).

The impact of Path-Goal theory may be most pronounced in the legacy it leaves. The evolution from Path-Goal to value-based leadership and then on to work unit leadership evidences the staying power of its premises. Evans (1996) notes that, “Donald Hebb once wrote that a good theory was one that stays around long enough to help one get to a better theory” (p. 307). Several theoretical advances have been made from the original Path-Goal theory. First, it altered the framework for analysis of leadership theory. Second, it led to the development of the 1976 Charismatic theory of leadership which has found solid support. Next, it brought into question the use of existing measurement instruments which are justified by their publication in other works but may be inappropriate for the theory at hand. Finally, it brings to light the tendency of researchers to remain in their own paradigms rather than question the foundational base of their assumptions (House, 1996).

Path-Goal leadership is formulated to be applied to a variety of organizations across economic sectors. House rejects the notion that specific industries are more likely to see the positive effects of Path-Goal leadership theory (1996). The motivations of followers are reflective of the tasks associated with their role. This can be in production occupations were the

tasks are routine and to engineering fields where large degrees of ambiguity exist to allow for innovative thought were both shown to benefit from this customized exercise of leadership behaviors. The adaptability of Path-Goal to organizational structure and economic sectors correlates to the organizational possibilities seen in liminal leadership situations.

### ***Transactional/Transformational leadership***

Transformational leadership was first referred to by J. V. Downton in 1973 (Northouse, 2007), but emerged as a leadership approach when James MacGregor Burns, a political sociologist, published his book *Leadership* in 1978. In this work Burns separated leadership from power, noting that follower's needs were paramount to leadership (Burns, 2003). He also denoted two types of leadership, Transactional leadership and Transformational leadership, which Bass (1990) contended were along a single continuum. Transactional refers to the exchanges that take place between leader and follower while Transformational is a process where a relationship is formed between the leader and follower which heightens the morality and motivation of both (Northouse, 2007).

While Transformational leadership theory will be the primary focus with its emphasis on intrinsic motivations; Transactional leadership does have a place in the tool chest of liminal leaders. The betweenness of organizational liminality often decreases the opportunity for long-term relationships to flourish. The benefits of Transactional leadership provide the external motivation often necessary in situations where the leader and follower work together for a brief time. Therefore, Transactional leadership allows the effective attainment of the organizational mission. Bass and Avolio (1990) speak to this, asserting, "Although we have described them as distinct, Transactional and Transformation leadership may be displayed by the same leader. In

fact, Transformational leadership builds from the transactional base to augment leader effectiveness” (p. 22).

However, the idea of Transformational leadership’s conceptualization, that it raises the morality in individuals, raised questions about leaders such as Adolf Hitler. This was dealt with by Bass when he termed leaders who negatively transform followers as Pseudo-Transformational leaders (Bass, 1998 as cited by Northouse, 2007). Pseudo-Transformational leadership, which focuses on the interests of the leaders, is deemed personalized leadership (Bass & Steidlmeier, 1999). It is characterized by leaders who are self-focused, use others, attempt to amass power, and have twisted moral values (Bass & Riggio, 2006 as cited by Northouse, 2007). True transformational leaders are concerned with the good of the group and are willing to set aside their interests for the greater good (Howell & Avolio, 1992).

Transformational leadership has been robustly studied since it was first proposed and has undergone subtle transformations of its own. There has come to be agreement on the four behavioral components of transformational leaders, and they are idealized influence, inspiration, intellectual stimulation, and individualized consideration (Conger, 1999). These behavioral components indicate that transformational leaders are focused on improving their followers from performance and personal development perspectives (Northouse, 2007). It is this aspect of Transformational leadership that is a part of what liminal leaders must undertake when leading followers but often they must do so in brief time spans.

The first component of Transformational leadership, idealized influence, describes leaders with strong moral values and promotes the type of leadership followers want to copy. The second component, inspirational motivation, implores the leader to communicate high expectations of their followers, often those modeled in idealized influence, in hopes of

motivating them to share the vision of the organization and be committed to its mission (Northouse, 2007). This is often accomplished through symbols and stories (Bolman & Deal, 2008). The third component, intellectual stimulation, finds the leader promoting innovation and creativity in dealing with issues that arise within the organizational setting thus improving productivity and motivation. The fourth component, individualized consideration, finds the leader engaged in individual encounters with followers where the follower feels heard, is coached, mentored, and encouraged in a manner consistent with their individual needs (Northouse, 2007).

### ***Authentic leadership***

Authentic leadership was born out of work undertaken on transformational leadership. The idea of pseudo versus authentic transformational leaders (Bass & Steidlmeier, 1999) began the development process of Authentic leadership (Avolio, Walumbwa, & Weber, 2009). Authentic leadership can be defined as, “a process that draws from both positive psychological capacities and a highly developed organizational context, which results in both greater self-awareness and self-regulated positive behaviors on the part of leaders and associates, fostering positive self-development” (Luthans & Avolio, 2003, p. 243). Authentic leadership is a multilevel theory because it includes the leader, follower, and the specific context (Avolio et al., 2009). It is this aspect of Authentic leadership that sufficiently resembles Liminal Leadership to warrant the comparison between the two.

Avolio et al., (2009) impart the consensus of general agreement among scholars of four components of Authentic leadership (p. 424). The first, balanced processing requires a careful analysis of available information be completed prior to the decision-making process taking place. The second, internalized moral perspective, require individuals to be guided by internalized

moral standards which result in the individual self-regulating behavior in accordance with those standards. The third, relational transparency, has the leader openly expressing relevant information and authentic emotions that are appropriate to the context while also suppressing inappropriate emotional expressions. The fourth, self-awareness, is the demonstration of the individual's awareness of their own strengths, weaknesses, and the manner in which they make sense of the world around them (Avolio et al., 2009; Walumbwa et al., 2008).

### ***Leader-Member exchange***

Leader-Member Exchange (LMX) leadership theory focuses on the interactions and relationship between leaders and followers (Avolio et al., 2009; Cogliser & Schriesheim, 2000; Northouse, 2007). Gerstner and Day (1997) believe the central principle in Leader-Member Exchange theory is the different relationships leaders make with their followers and the impact the quality of that relationship has on important outcomes. Leader-Member Exchange can be thus defined, "leadership occurs when leaders and followers are able to develop effective relationships that result in mutual and incremental influence" (Uhl-Bien, 2006).

There are several advantages of Leader-Member Exchange theory that make it useful to contrast with Liminal Leadership. First, it has been shown that a higher-quality LMX relationship was a predictor of higher performance levels and organizational citizenship behaviors (Ilies, Nahrgang, & Morgeson, 2007). Next, LMX theory focuses on the fact that effective leadership is contingent on effective leader-member exchanges (Northouse, 2007). Northouse (2007) also notes that LMX theory is important because it brings attention to the important role communication plays in leadership. Communication is the foundational element to building the important relationships that are vital to effective leadership which is characterized by communication that is based on, "mutual trust, respect, and commitment" (North house, 2007,

p. 159). Leadership-Member Exchange theory offers the liminal leader important lessons but fails to address the complete dynamics of leadership created by the situational complexity faced by liminal leaders (Pontefract, 2014).

### ***Complexity leadership theory***

Complexity leadership theory seeks to move the discussion of leadership to more closely align with the current organizational structures (Avolio et al., 2009). Previous leadership models were hierarchical which reflected the structures of the organizational norms of the times (Uhl-Bien et al., 2007). They did not reflect the trends in the knowledge-driven industry of today (Lichtenstein et al., 2006). Leadership in this instance must transition from a formal model where positional power is invoked in a hierarchical system to a model where the knowledge and skills of followers is moved toward the organizational mission through the leader's influence and engagement with the organizational group members (Pontefract, 2014).

Complexity leadership theory takes the view that leadership is not 'in' or 'done' by an individual, but is 'an emergent event' that is an 'outcome of relational interactions' between various agents (Lichtenstein et al., 2006). In this view, leadership emerges from the interaction of leaders, followers, and the context of the situation. The leader's role is to expedite those interactions between individuals and bring them together as a group toward a collective goal (Meyer, Gaba, & Colwell, 2005). Complexity leadership theory provides a theoretical framework for understanding the interactive dynamics that are noted by a variety of emerging leadership theories (Lichtenstein et al., 2006).

Due to the interactional nature of the leadership construct outlined by Complexity leadership theory, leadership can occur anywhere across a social system (Lichtenstein et al., 2006). The adaptive nature of Complexity leadership requires various individuals to utilize their

skills, abilities, and experience to act as leaders at various points in the process. Thus, the leader in this situation becomes the facilitator for mobilizing people to seize the opportunity to input their abilities into the process as needed to adapt to the changing contextual surroundings and culture (Lichenstein et al., 2006). Complexity leadership theory requires the leader to abdicate that role in order for leadership to emerge. In this view, “leadership events are not constructed by the actions of single individuals; rather, they emerge through the interactions between agents over times” (Lichenstein et al., 2006, p. 4).

### ***Global leadership***

Global leadership has at its core a similar contextual setting as Liminal Leadership. Global leadership is undertaken in a constantly changing and evolving context (Mathews, 2016). It is best examined in a non-linear fashion, which more closely reflects modern social, business, and organizational practices (Osland et al., 2006). While traditional leadership theories apply to organizations that operate within given parameters, the global context requires a changed focus that incorporates organizations where the boundaries are less distinct. The business world notes these multi-national and transnational corporations (Mathews, 2016) that are impacted by the diversity that often results in the need for liminal leaders.

Global leadership, like Liminal Leadership, exists at the intersectionality of the constructs (Mathews, 2016). Whereas Liminal Leadership exists at the convergence of ‘liminality’ and ‘leadership’, Global leadership comes into being at the crossroads of ‘global’ and ‘leadership’. The complexities of this intersectionality are reflected in the definition of Global leadership offered by Mathews (2016), “Global leadership entails the interrelationships that exist among the endogenous and exogenous process of influencing and being effective in the context of global business operations and management characterized by heterogeneity and complexity” (p. 42).

Liminal leaders operate in a similar context, but liminality occurs for a variety of reasons. Thus, liminality is not strictly global in nature.

Various researchers have studied the constructs of Global leadership from the perspectives of cognitive complexity, competency, behavioral, human capital, personality process, and global mindset. Matthews (2016) has brought them together to formulate a Global Leadership Model. These constructs offer a framework for global leaders to be effective which refers to a leader's ability to influence others to act in a manner that achieves organizational goals (Tubb & Schulz, 2006). According to Mathews (2016), his conceptual model had to address several points in order to be considered a general model for Global leadership. It must first address the differences between domestic and global leaders, or as Cunha and Cabral-Cardoso (2006) term them, local and global leaders. The second point was that it must identify specific behaviors of Global leaders. Third, the "cognitive, emotional, and motivational processes" undertaken by global leaders must be identified (Mathews, 2016, p. 42). Finally, meaning must be assigned to global leadership effectiveness (Osland et al., 2006).

The Global Leadership Model offered by Mathews (2016) begins by addressing the cognitive factors and processes of global leaders. These cognitive factors include the manner in which leaders think through situations and process information (Avolio et al., 2009). Global leaders are identified by their complex cognitive structures that allow them to filter, analyze, and categorize large quantities of information (Gupta & Govindarajan, 2002). This allows them to arrange the information in a manner that empowers effective decision making (Levy et al., 2007). The essential components of this cognitive structure are schema. The various schemas are used to guide decision making and to carry out specific patterns of behavior (Mathews,



2016). The use of cultural schema is what allows Global leaders to effectively lead in culturally diverse situations (Ng, Tan, Ang, Burton, & Spender, 2011 as cited by Mathews, 2016).

The next component of Global leadership is emotional resilience (Mathews, 2016). This component has been referred to as the basic characteristic of Global leadership (de Vries & Florent-Treacy, 2002). The competencies associated with Global leadership are divided into two categories: personal and social competency (Goleman, 1998). Personal competency is further divided into self-awareness and self-regulation (Mathews, 2016). Self-awareness which is the ability to perceive and manage emotions within one's self, and social competency which is awareness of the emotional state of others in social interactions, comprise social competency (Mathews, 2016).

Global leaderships must possess cultural intelligence. Cultural intelligence requires a shift from an ethnocentric to a geocentric mindset (Mathews, 2016). A geocentric mindset requires the individual to be culturally self-aware, open to new cultures, have a willingness to understand other cultures and selectively implement foreign values and customs (Levy et al., 2007).

Cultural intelligence can be seen as multi-dimensional comprised of meta-cognitive, cognitive, motivational, and behavioral intelligences (Early & Ang, 2003). Meta-cognitive intelligence means being aware and conscious of the similarities and differences between cultures when cultural heterogeneity exists (Mathews, 2016). Cognitive intelligence is a more expansive knowledge of various cultures and encompasses the economic, political, technological, social, and legal variations in the context of various cultures. Behavioral intelligence incorporates a variety of culturally appropriated, verbal and non-verbal behaviors, that produce effective results when the global leader is in a multi-cultural context as noted by Ng

et al., (as cited in Matthews, 2016). Motivational intelligence requires the global leader to be attentive to diverse cultures and a willingness to adapt according to the cultures present (Matthews, 2016).

Several motivational theories indicate specific leader motivations associated with effective global leaders. Trépanier et al. (2012) used the Self-Determination Theory (SDT) to explain the motivational processes of global leaders. Barbuto (2005) added to the knowledge with a study linking motivation to use of specific leadership styles. Their findings suggest that intrinsic processes designated self-concept-internal and goal internalization motivation are those most closely associated with effective global leaders (Barbuto, 2005). Self-concept-internal motivation requires the leader to internalize standards for traits, competencies, and values they would characterize as their ideal self (Leonard et al., 1999). Goal internalization motivations occur when adopts attitudes, behaviors, and values that are consistent with goal realization (Barbuto, 2005; Matthews, 2016). A related concept to this finding is self-regulation which refers to the individual's ability to recognize the emotions within and align themselves with the necessary approaches that will either move them toward the goal or avoid possible negative outcomes (Matthews, 2016).

Strategic placement places the global leader in context that drives specific responses. Political, legal, and societal aspect of institutions varies within certain economic sectors and determines the strategy and performance (Peng et al., 2008). A global leader's ability to effectively lead will be influenced by their strategic orientation. This orientation will require a balancing of global concentration, global synergies of scale and scope economies, and global strategic motivation where a field of wider choices in made available (Kim & Hwang, 1992).

The personality processes of global leaders have been widely analyzed but the most important factor that determines effectiveness as a global leader is adaptability (Dalton & Ernst, 2004 as cited by Matthews, 2016). Matthews (2016) explains, “in the nonlinear process, a global leader, to be effective, must make continuous and evolving adaptation to a changing and complex environment” (p. 49). Various traits associated with openness to other cultures are also noted. They include flexibility and accommodation (Beaman, 2004, as cited by Matthews, 2016), openness to experience, intellectance, ethnocentrism, and allocentrism and tolerance for ambiguity (Paul, Meyskens, & Robbins, 2011, as cited by Matthews, 2016). These are examples of the held personality traits of global leaders.

Global leaders are visionary leaders (Matthews, 2016). Visionary leaders are capable of envisioning the future state of the organizations, communicate that vision to the organizational followers, and then empowering the followers to achieve the articulated vision (Westley & Mintzerberg, 1989). Visionary leaders can be characterized as, “earth-bound dreamers with groundbreaking ideas that can be translated into reality” (Matthews, 2016, p. 49). In the exercise of visionary leadership, these individuals utilize theatrics (Westley & Mintzberg, 1989), high emotional expressivity (Groves, 2006), and are capable of assembling the necessary resources to make the seemingly impossible, possible (Matthews, 2016).

The final component of Global leadership is a global mindset. Global mindset can be described as a set of cognitive capabilities that allow a leader to interpret the world which allow them to direct actions, decisions, and solutions (Kefalas,1998). These cognitive capabilities encompass an openness to multiple cultures, synthesize across local and global levels and integrate the information in order to determine the necessary action (Levy et al., 2007). The

global mindset of leaders is related to organization effectiveness thus making it a critical component of global leadership (Matthews, 2016).

### ***Virtual or E-Leadership***

The final leadership theory to be considered is Virtual or E-Leadership. While Virtual or E-Leadership offered minimal contributions to the previous theories; it did offer specifics of communication and work patterns to several of the models. It is not included in the comparison for Liminal Leadership but is included to provide a better understanding into how leaders manage teams that are not co-located. Virtual or E-Leadership has come into focus as the structure of organizations and advancements in technology has fostered a surge of virtual teams. It is reported that in companies with 500 or more employees, 61% have been on a virtual team as some point in time (MCIWorldcom, 2010) and that number grows to 80% for organizations with more than 10,000 employees (Schmidt, 2014). A virtual team is unique in context in that it may span culture, geographic locale, time zones, and at times, different organizations using technology for communication and collaboration between team members (Huang et al., 2010; Schmidt, 2014). As more work is accomplished via virtual teams, leadership for these teams becomes paramount (Schmidt, 2014).

How leadership is perceived is often based on the social interactions and relationship formed by leaders. The process by which this is carried out in virtual teams is very different due to the technological communication methods often necessary (Schmidt, 2014). Consequently, leaders are necessary to facilitate communication between the various team members (Gajendran & Joshi, 2012) which lead to stronger personal connections. Stronger connections are believed to produce more productive virtual teams (Hart & McLeod, 2003).

Communication may well be at the heart of effective Virtual leadership (Avoilio et al., 2009; Schmidt, 2014; Zigurs, 2003). How that communication takes place, the frequency with which it needs to happen, and the type of interactions that occur are vital to the virtual team. However, the virtual leaders should guide the group through the establishment of parameters for communication so that everyone understands the expectations for group communication which bridges the norms of multiple groups, cultures, and occupational standards (Zigurs, 2003). Once these communication parameters have been established the virtual leader should actively promote interaction between the members through various electronic communications forms and have frequent personal communications with each member. Additionally, various social media applications can assist the group in forming personal relationships that strengthen the bonds of the group (Schmidt, 2014).

Training virtual teams to use the necessary technology in order to communicate effectively should be overseen by the virtual leader (Zigurs, 2003). Younger generations, or “digital natives” (Bennett, Maton, & Kervin, 2008), are generally well versed in the necessary skills to utilize the various methods of communication technology but those who are not fluid must be acculturated. The varying degrees of communication technology mastery will impact the choices a virtual leader makes. Communication customization is necessary to fully engage every virtual team member (Schmidt, 2014).

Customized communication may be the key communication behavior of the virtual leader. Communication must be customized to each individual, context, and task. The mindfulness of communication style, tone, and vehicle is vital to the virtual leader. It is also vital to the liminal leader who meets their followers in a similar range of leadership foci. Zigurs (2003) defines the range as, “a full range of leadership development means thinking in terms of

process, of leaders and followers, and of developing the right context for both leaders and followers to grow and thrive” (p. 342).

With an intention to clarify how these different leadership theories juxtapose with Liminal Leadership, the following table comparing the commonalities and contrasts among them was created.

**Table 1**

*Comparison of Different Leadership Theories*

<b>Leadership Theories</b>	<b>Major Themes</b>	<b>Commonalities with Liminal Leadership</b>	<b>Contrasts with Liminal Leadership</b>
Path-Goal	<ul style="list-style-type: none"> <li>- Leader behaviors chosen by subordinates’ needs.</li> </ul>	<ul style="list-style-type: none"> <li>- Customized behavior toward followers.</li> </ul>	<ul style="list-style-type: none"> <li>- Does not address the intrinsic aspects of Liminal Leadership</li> </ul>
Transactional/ Transformational	<ul style="list-style-type: none"> <li>- Leader follower exchanges.</li> <li>- Relationship builds both.</li> </ul>	<ul style="list-style-type: none"> <li>- Accomplishes goals.</li> <li>- Relationship builds unity.</li> </ul>	<ul style="list-style-type: none"> <li>- Does not address the inherent conflict between group members when liminality occurs that a Liminal Leader must navigate.</li> </ul>
Authentic	<ul style="list-style-type: none"> <li>- Includes leader, follower, and context.</li> </ul>	<ul style="list-style-type: none"> <li>- Includes multiple foci including leader, follower, and context.</li> </ul>	<ul style="list-style-type: none"> <li>- Intrinsic nature must be customized by cultural standards.</li> </ul>
Leader-Member Exchange	<ul style="list-style-type: none"> <li>- Leadership influences quality of LMX.</li> <li>- Communication is foundational.</li> </ul>	<ul style="list-style-type: none"> <li>- Customized communication between leader and follower.</li> </ul>	<ul style="list-style-type: none"> <li>- Fails to address situational complexity.</li> </ul>
Complexity	<ul style="list-style-type: none"> <li>- Leadership is an emergent event.</li> </ul>	<ul style="list-style-type: none"> <li>- Interprets changing context/culture in people/time decisions.</li> </ul>	<ul style="list-style-type: none"> <li>- Liminal leaders may have positional power as well.</li> </ul>
Global	<ul style="list-style-type: none"> <li>- Occurs at the intersectionality of global and leadership.</li> </ul>	<ul style="list-style-type: none"> <li>- Occurs at the intersectionality of liminality and leadership.</li> </ul>	<ul style="list-style-type: none"> <li>- Does not always involve a global component.</li> </ul>

## **A Conceptual Framework of Liminal Leadership**

Based on the review and synthesis of related literature, a conceptual framework of liminal leadership was developed to prompt opportunities for future research. This framework was developed utilizing the Commonalities/Contrasts section of Table 1. The commonalities were derived from the identified leadership theories that had similarities to the complex situational characteristics that comprise a liminal space where leadership would be needed. Each leadership theory was examined to link key actions within that theory that corresponded to the similarity in Liminal Leadership. The characteristic was added if the leadership activity matched the element with one in Liminal Leadership.

Once the list of characteristics had been formulated from the relevant leadership theories, they were organized into categories that reflected the type of action or activity to be undertaken. These categories: adaptive leadership, directive leadership, relational leadership, and intrinsic; are descriptive of the nature of the leadership action. Since liminal leadership requires a conglomeration of different leadership theories, the necessary actions cover a continuum that might appear incongruent to those who embrace traditional leadership theories. Liminal leaders must be prepared to adapt to an ever-changing environment while also directing followers to achieve the organizational goals. This is accomplished by directive means, and, at times, through relational persuasion. The discretion to choose appropriate actions is developed through the intrinsic characteristics that empower the leader to discern the appropriate leadership action through emotional and cultural intelligence.

The individual characteristics are listed within the four dimensions of leadership in Table 2. Each characteristic is correlated to one of the leadership theories identified as similar to

Liminal Leadership. The citation that follows the characteristics reference the leadership theory from which they were gained.

The conceptual framework of Liminal Leadership should be understood with several perspectives. First, as noted above, the major components of Liminal Leadership comprise adaptive leadership, directive leadership, relational leadership, and intrinsic. Second, Liminal Leadership occurs in a contextual base where followers originate from a span of cultures, generations, nations, languages, and organizations. Third, organizational structural shifts increase the instances of liminality where Liminal Leadership becomes necessary. Lastly, different motivations between individuals cause liminality to occur in otherwise non-liminal situations. Based on these perspectives, the following characteristics can compose the four domains of liminal leadership.

### **Liminal Leadership: Characteristics and Approaches**

The following narrative on the characteristics and approaches are drawn from the components of the leadership theories reviewed below. The characteristics and approaches were mined from contextual, situational, relational, and missional similarities between the reviewed leadership theories and Liminal Leadership. The similarities resulted in the finding of seventeen components of liminal leaders categorized into four leadership categories. Three of the categories, adaptive leadership, directive leadership, and relational leadership, focus on the extrinsic actions of the leader and the fourth category, intrinsic, focuses on the intrinsic processes of the individual.

Adaptive leadership is used by the liminal leader to adapt to the followers, groups, context and situation (Avolio, Walumbwa, & Weber, 2009; Dalton & Ernst, 2004 as cited by Mathews, 2016; Howell & Avolio, 1992; Kefalas, 1998; Lichtenstein et al., 2006; Peng, Wang,



& Jiang, 2008; Uhl-Bien, Marion, & McKelvey, 2007). It is also found in leadership behavior that is tailored to the needs of the followers and their situation (Northouse, 2007). This is vividly reflected in the leader's use of customized communication by generation, culture, and geographical proximity (Huang, Kahai, & Jestice, 2010; Schmidt, 2014; Zigurs, 2003). This set of behaviors fits the nature of organizational liminality.

The second category is directive leadership. Directive leadership begins with the liminal leader casting a vision of the organizational goals for their followers (Bolman & Deal, 2008; Bullock, 1996; Conger 1999; Kripal, 2007; Lindsay, 2010; Mathews, 2016; Simmel, 1971; Westley & Mintzerberg, 1989). Often accomplished through the use of stories and symbols (Bolman & Deal, 2008), information sharing and sense-making (Cunha & Cabral-Cardoso, 2006; Weick & Sutcliffe, 2011) allow the leader to aid the followers' understanding of the contexts, task, and goals compromising their work situation. The liminal leader must effectively engage in participatory leadership activities establishing a 'generalized other' standard of behavior and communication for their followers and groups (Giddens, 1976; Jarvenpaa & Leidner, 1999; Zigurs, 2003). Once standards are established, the liminal leader facilitates communication exchanges between the group members (Gajendran & Joshi, 2012; Meyer, Gaba, & Colwell, 2005; Pontefract, 2014; Schmidt, 2014; Zigurs, 2003), thus beginning the process of building the personal relationships necessary for liminal work units. Finally, the liminal leader engages in transactional exchanges when necessary (Northouse, 2007).

The third category is relational leadership. These behaviors build relationship and trust between the leader and followers. Liminal Leadership is influence based (Lichenstein et al., 2006; Pontefract, 2014), thus the building of personal relationships (Avolio et al., 2009; Cogliser & Schriesheim, 2000; Gerstner & Day, 1997; Hart & McLeod, 2003; Northouse, 2007; Uhl-

Bien, 2006) are foundational. Intense communication (Avolio et al., 2009; Schmidt, 2014; Zigurs, 2003), where the leader frequently communicates with group members from a professional and personal perspective, provides the motivation, inspiration, and influence to encourage goal attainment of the followers (House, 1996; Northouse, 2007; Tubb & Schulz, 2006). It also allows the leader to focus on improving their follower's performance and personal development (Conger 1999; Northouse, 2007).

The fourth category, self-leadership, focuses on the intrinsic processes of the liminal leader that empowers them to lead in a state of liminality. These leaders tend to be comfortable with ambiguity (Mathews, 2016; Osland, Bird, Mendenhall, & Osland, 2006) and intrinsically motivated (Barbuto, 2005; Leonard, Beauvais, & Scholl, 1999; Mathews, 2016; Trépanier, Fernet, & Austin, 2012). They actively engage in self-reflexivity, self-regulation, and are acutely self-aware (Avolio et al., 2009; Gupta & Govindarajan, 2002; Luthans & Avolio, 2003; Walumbwa, Avolio, Gardner, Wernsing, & Peterson, 2008). This creates a mindfulness within (Avolio et al., 2009; Levy, Beechler, Taylor, & Boyacigiller, 2007; Walumbwa et al., 2008; Weick & Sutcliffe, 2011) which enables them to engage in adaptive leadership practices. Cultural intelligence (Early & Ang, 2003; Jarvenpaa & Leidner, 1999; Levy et al., 2007; Ng, Tan, Ang, Burton, & Spender, 2011 as quoted by Mathews, 2016) fosters the knowledge necessary to adapt to individuals of other cultures. Emotional intelligence and emotional resiliency (Burns, 2003; Gardner, 1995) give them the ability to quickly recover from adversaries.

### **Liminal Leadership Model**

A logical framework was drawn of leadership components that a liminal leader might utilize from the previous discussion of the chosen leadership theories. Each theory had some

kinship to Liminal Leadership and was chosen for their likeness in some fashion. There are commonalities that exist between more than one leadership theory and there are some components that are unique to a few of the theories.

Liminal leaders in complex organizations need to align their actions with the types of organizations that exist today (Uhl-Bien et al., 2007). Pontefract (2014) quotes, Lawrence A. Bossidy, former CEO at AlliedSignal, who summarizes what is needed of current leaders when he says, “We need people who are better at persuading than at barking orders, who know who to coach and build consensus. Today, managers add value by brokering with people, not by presiding over empires” (para 5). Perhaps when this activity occurs, it can be observed that the individual has moved from a manager to a leader.

**Table 2**

*Dimensions and Characteristics of Liminal Leadership*

Dimensions	Characteristics
Adaptive characteristics	<ul style="list-style-type: none"> <li>• Adapt to the followers, groups, context and situation (Northouse, 2007).</li> <li>• Customized communication by generation, culture, and geographical proximity (Schmidt, 2014).</li> <li>• Maintain the status quo in an unstable or rapidly changing situation (Richardson, 2002).</li> <li>• Rapidly bounce back and overcome turbulent conditions (Denhardt &amp; Denhardt, 2010).</li> <li>• Understand its current situation and develop customized responses that reflect that understanding (Lengnick-Hall &amp; Beck, 2005).</li> <li>• Predict changes to create new opportunities (Lengnick-Hall et al., 2011).</li> <li>• Develop a repertoire of routines to respond to unexpected changes (Lengnick-Hall &amp; Beck, 2005).</li> </ul>

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Directive  
characteristics

- Cast a vision of the organizational goals for their followers (Bolman & Deal, 2008).
- Information sharing and sense-making to aid the followers (Weick & Sutcliffe, 2011).
- Establish a standard of behavior and communication for their followers and groups (Zigurs, 2003).
- Facilitate communication exchanges between group members (Pontefract, 2014).
- Engage in transactional exchanges when necessary (Northouse, 2007).

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Relational  
characteristics

- Build personal relationships (Cogliser & Schriesheim, 2000).
- Frequently communicate from a professional and personal perspective (Schmidt, 2014).
- Provide motivation and inspiration to encourage goal attainment (House, 1996)
- Focus on improving their follower's performance and personal development (Conger 1999)
- Openly express authentic emotions appropriate to the context (Avolio et al., 2009).

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Self-Leadership  
characteristics

- Comfortable with ambiguity (Mathews, 2016).
  - Intrinsically motivated (Trépanier, Fernet, & Austin, 2012).
  - Self-reflexivity, self-regulation, and self-aware (Avolio et al., 2009).
  - Cultural intelligence (Levy et al., 2007).
  - Emotional intelligence and resiliency (Burns, 2003).
- 

## Scale Development

Scale development becomes necessary when existing measurement tools are not sufficient or there is not a scale that would measure the observed phenomena (DeVellis, 2003).

It is often utilized to meet common needs such as census and voting activity rather than merely theoretical interests. Each area of science has its own approach to measurement. In social and behavioral sciences, psychometrics has emerged as the subspecialty to “measure psychological and social phenomena” (DeVellis, 2003, p. 3).

Arguably, the roots of measurement are founded in social processes, “their origins seem to represent attempts to meet every day human needs, not merely experiments undertaken to satisfy scientific curiosity” (Duncan, 1984, p. 106). In fact, some forms of measurement are noted in ancient works. Biblical references include “A false balance is an abomination to the Lord, but a just weight is a delight” (Proverbs 11:1), Aristotle’s writings included “officials charged with weights and measures” (DeVellis, 2003), civil service exams in China as early as 2200 BCE (DuBois as reprinted in Barnette, 1976), and the “weight of seven” which formed the base for 7<sup>th</sup> century Muslim taxes (Wright, 1999).

While some form of systematic observations was occurring, the development of a science measuring human behavioral and psychological processes was stalled by the lack of statistical methods (Nunnally, 1978). The development of appropriate statistical methods in the nineteenth century finds its beginnings in the work of Charles Darwin. His work included observations and measurement of “systematic variation across species” (DeVellis, 2003, p. 4). Similar techniques were applied to humans by Darwin’s cousin, Sir Francis Galton. A junior colleague of Galton, Karl Pearson, is often thought to be the founder of statistics (Allen & Yen, 1979). Pearson, for whom the product-moment correlation coefficient is named, developed the necessary mathematical tools to systematically inspect the relationships between variables. Charles Spearman furthered the work and provided the foundation for the development of factor analysis

(DeVille, 2003), by Louis L. Thurstone (Nunnally, 1978), in the early twentieth century (DeVellis, 2003).

Social scientist frequently study phenomenon that is not directly observable. These variables of interest include: beliefs, motivation, expectancies, needs, emotions, and self and social perceptions (DeVellis, 2003). These phenomena are often derived from theoretical constructs which impact how measurement problems are conceptualized and studied. However, “even among theoretically derived variables, there is implicit continuum ranging from relatively concrete and accessible phenomena to relatively abstract and inaccessible phenomena” (DeVellis, 2003, p. 9). Thus, it is important for the researcher to be well versed in the specific phenomenon of interest in order to effectively conceptualize the variables to be studied and then choose appropriate measurement tools.

Measurement is a foundational activity in social science. Psychometrics, or the specialty area of social science that attempts to measure behavioral and psychological phenomena, has its roots in antiquity. Theory plays a vital role in formulating the measurement scale which, “are collections of items that reveal the level of an underlying theoretical variable” (DeVellis, 2003, p.13). It is in the roots of theory that Liminal Leadership will be observed and measured.

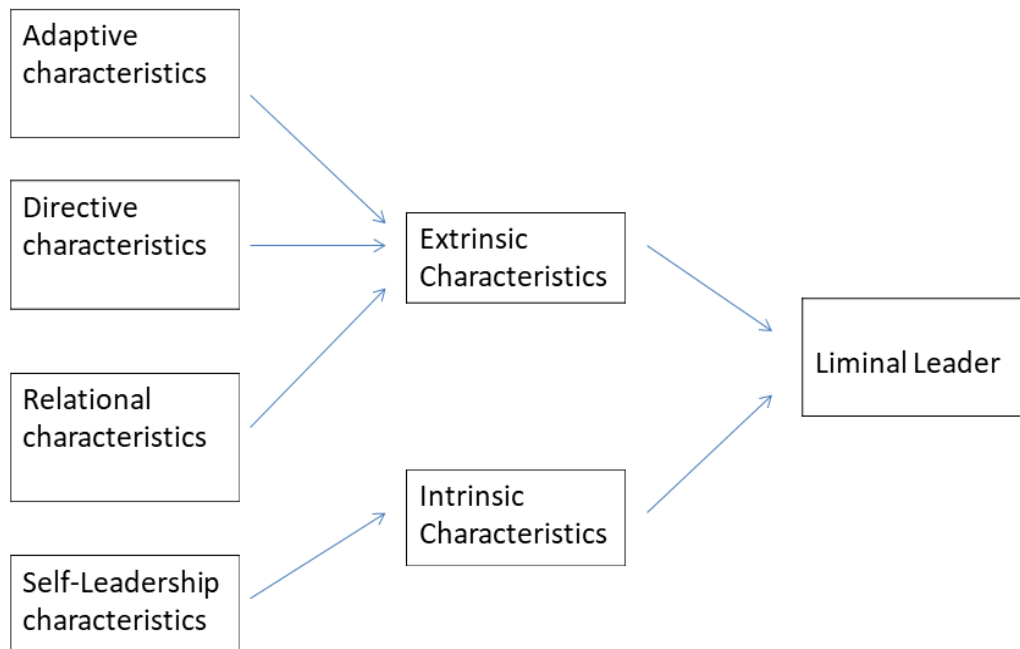
In order to examine the associations between Liminal Leadership and the outlined variables the study will be directed toward operationalizing the construct of Liminal Leadership. There are two research questions that will guide the study. First: what are the extrinsic characteristics of a liminal leader? This research question will seek to identify the processes and behaviors the individual liminal leader employs in the effort to move followers toward the organizational mission. Therefore, the focus is on external actions undertaken in those efforts.

This research question would seek to confirm the hypothesis that display the adaptive, directive, and relational characteristics outlined in Table 2.

The second research focus may ask: How do liminal leaders think about leading? This research question focuses on the intrinsic motivations of the liminal leader. Many seek to lead, but the purpose is to discover what empowers liminal leaders to live with the consistent state of ambiguity liminality brings to their leadership activities. Research question two seeks to confirm the characteristics of the Self-Leadership section on Table 2. The Liminal Leadership Model can be seen in Figure 4.

**Figure 4**

*Liminal Leadership Model*



## **Paradigm**

The foundation of this leadership theory is rooted in leading in an ever-changing environment. Therefore, Liminal Leadership is a new leadership paradigm. The contemporary

meaning of paradigm is rooted in Thomas Kuhn's book, *The Structure of Scientific Revolutions*. Kuhn defined paradigms with the definition of 'normal science' that have two essential characteristics. He states that 'normal science' means, "research firmly based upon one or more past scientific achievements, achievements that some particular scientific community acknowledges for a time as supplying the foundation for its further practice" (Kuhn, 1996, p. 10). The first essential characteristic required the scientific achievement was sufficiently unparalleled to draw others in the community away from the previous foundational models. The second was that the new achievement had sufficient new problems for the community of practitioners to tackle. Once an achievement met these criteria it was considered to be a paradigm by Kuhn (1996).

Paradigm shifts, where one foundational or philosophical framework is supplanted by another, are a response to unexplainable aspects of the current paradigm. The accumulation of components that do not fit the current paradigm along with the proposal of a new paradigm that encompasses relevant aspects of the old while offering some explanation of the newly encountered phenomena provides the foundation for a new paradigm to emerge. Kuhn's articulation of paradigms could be seen as a shift in how academia spoke of science (1990).

Michael Foucault, the French philosopher, used similar terms, such as episteme and discourse, for aspects of Kuhn's paradigms that are still used by academia today. Kuhnian paradigms have been used in other disciplines as well as the physical sciences. While Kuhn did not believe paradigms exist in the social sciences, Larry Laudan moved the debate with his assertion that something similar does exist in the social sciences which he referred to as research traditions (1977). Handa introduced the use of social paradigms in the social sciences believing



these social paradigms had the same foundations as Kuhn's paradigms and believed paradigm shifts occurred in the social sciences as well (1986).

The acceptance of a new paradigm is often difficult due to something called paradigm paralysis, where there is a refusal to consider models outside of the current thought within the discipline. Researchers would think of this as something akin to confirmation bias. Hutchin (2013) offers conditions that move a system of thought to paradigm status. They include acceptance by professional organization, support from leaders, published works that support the paradigm legitimacy, the teaching of the paradigm, media coverage, conferences where the central ideas are discussed, and funding for further research.

### **Conclusion**

Our globalized world changes life in many ways. Organizations have been impacted by the enlarged boundaries. The subsequent changes to how organizational goals are reached have resulted in places of organizational liminality. The movement of people due to changing employment opportunities will create workplaces that span generations, ethnicities, language, and extend beyond national boundaries; this creates liminality within organizations.

Organizational liminality will increase rapidly in the near future and the need for leadership in those situations is great. A better knowledge of what constitutes an effective Liminal Leader is imperative to recruit, train, and retain leadership in these changing times. This study seeks to advance the base of knowledge of what is known about individuals who lead in liminal situations in order that organizations can select those individuals best suited for their rapidly changing environments.

## **CHAPTER THREE**

### **Methodology**

This chapter will discuss the design of the research study aimed at developing a Liminal Leadership Scale. It will briefly cover the development of the Liminal Leadership Model, the sample drawn including demographic characteristics, the proposed analytic methods, and the actual methods carried out which were dictated by the data itself. Additionally, an exploration was made into the impact culture, generation, and gender had on the scale that was developed.

### **Problem Statement**

The problem can be concisely stated as: Transitions will increase as a result of changing organizational structural norms and an expanding global economy. The demand for liminal leaders will continue to increase due to the factors listed: global culture, changes in organizational structural norms, and projected global labor shortages. As a result, liminal leadership will become more prevalent.

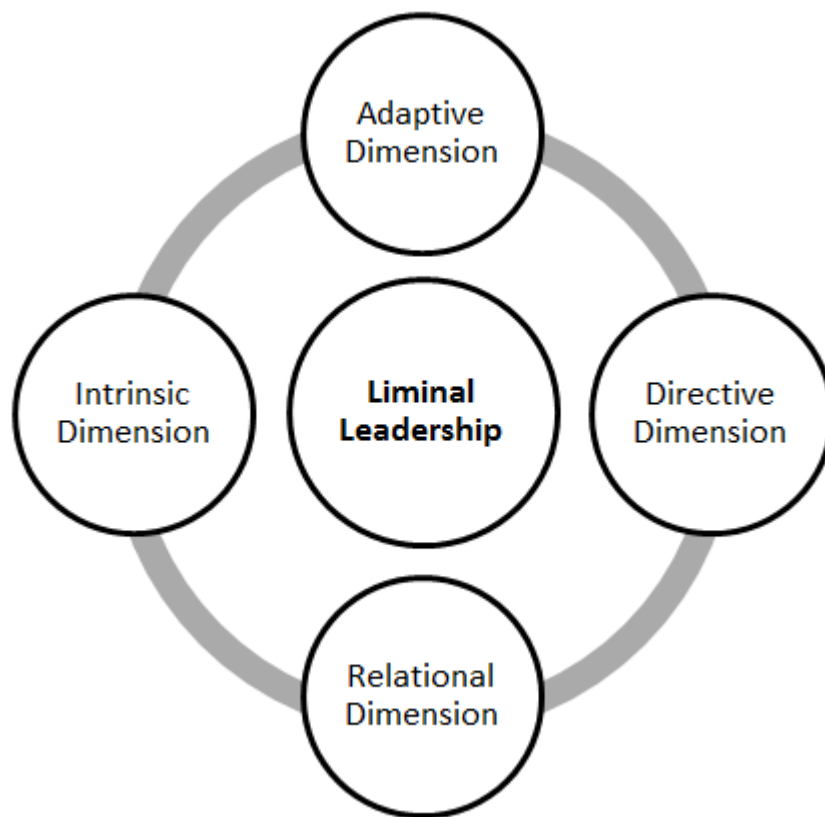
### **Purpose Statement**

The purpose of this quantitative research study is to operationalize the construct of Liminal Leadership and to create a valid and reliable scale to measure this construct. For the purposes of this research, liminal leaders are individuals who lead through initial or transitional spaces. After completing an integrated literature review of literature based in liminality, leadership, and organizational structure, four dimensions of Liminal Leadership were drawn with multiple characteristics within each dimension which is shown in Figure 5. The conceptual model was then sent to an expert panel for refinement. These panelists were recruited based on their credentials as leadership scholars and recommendation on their behalf by Dr. Doo Hun

Lim. An email was sent asking for their feedback on the proposed characteristics and dimensions. The result is the Liminal Leadership Model (Shaw VanBuskirk, Lim, & Jeong, 2019), which is shown in Table 2. This chapter outlines the process proposed for the development of a scale that is consistent with the Liminal Leadership Model.

### **Figure 5**

*Four Dimensions of Liminal Leadership Model*



### **Research Questions**

The focus of this study will focus on three research questions:

RQ #1 – How do liminal leaders lead?

RQ #2 – How do liminal leaders think about leading?

RQ #3 – What motivates liminal leaders to lead betwixt and between?

## **Research Paradigm and Design**

The goals of this researcher are similar to Corbin and Strauss (2008) who state, “I am practical in what I want to accomplish in my research” (p. 11). It is hoped that it is possible to develop a leadership model that can be useful to other individuals who find themselves in the role of a liminal leader. Again, agreeing with Corbin and Strauss, “I want to develop knowledge that will guide practice” (p. 11). It can be emphatically stated that this research study is approached from a pragmatic paradigm that shapes the researcher’s worldview and the manner in which the task presented is attended (Creswell, 2015).

The Liminal Leadership Scale will be developed utilizing a quantitative approach. Quantitative analysis was chosen as the method of inquiry because this research focuses on the development of a measurement scale and formulated variables for study. This research will correlate them to hypotheses drawn from literature and will use standards of reliability and validity (Creswell, 2014). Quantitative analysis is defined as “the numerical representation and manipulation of observations for the purpose of describing and explaining the phenomena that those observations reflect” (Babbie, 1983, p.537).

As previously stated, the integrative literature review revealed a gap that demonstrates how little is known and the absence of any research studies with liminal leaders as the focus. Therefore, the purpose of this research was to operationalize the construct of Liminal Leadership by developing a scale to empirically investigate the characteristics of a liminal leader. The absence of previous research into Liminal Leadership means that no measurement scale exists to study liminal leaders. Due to the lack of research, the development of a valid and reliable scale was the most appropriate choice.

Measurement instruments use a group of items that can be combined for a composite score to reveal levels of theoretical variables that cannot be detected by direct observable means (DeVellis, 2003). Scale development has a specific purpose in our research arsenal, “We develop scales when we want to measure phenomena that we believe to exist because of our theoretical understanding of the world, but that we cannot assess directly” (DeVellis, 2003, p. 9). DeVellis identified eight steps for scale development and those were utilized as a framework for this research. Those steps included: (1) clearly determine what you want to measure, (2) generate an item pool, (3) determine format for measurement, (4) have the initial item pool reviewed by an expert, (5) consider inclusion of validation items, (6) administer items to a development sample, (7) evaluate the items, and (8) optimize scale length (DeVellis, 2003). This research will follow these steps in the development of a Liminal Leadership Scale.

### **Development of a Scale**

#### **Clearly Determine What You Want to Measure**

In undertaking the literature review, guidelines adopted by various researchers (Callahan, 2010; Torraco, 2005) were used. In conducting the literature review, relevant literature was collected using various online databases including JSTOR, ERIC, Emerald Insight, Google Scholar, Academic Search Complete, and Human Resources Abstracts that were relevant to the research questions and purpose of this task. Articles were searched using the terms ‘liminal’, ‘liminality’, ‘liminal leadership’, ‘organizational liminality’, and ‘contingent leadership’ as search titles, and/or keywords, and mixed search terms. The initial search yielded a total of two hundred, ninety-three articles from the United States, Europe, Asia, and Africa, for closer examination.

A staged review process (Torraco, 2005, 2016) was applied to examine abstracts. In-depth reviews were completed on full articles based on criteria related to the research questions. Inclusion criteria included: (a) fluid organizational structure; (b) articles containing a comprehensive literature review or empirical research noting similar context; (c) studies that provided rich narrative of thought or practice of leaderships styles in similar organizational structures. This screening process resulted in the exclusion of articles with dissimilar organizational structure, the use of liminality in other academic disciplines, and studies with vague or insufficient methodological grounding. Snowball technique was employed when relevant articles were noted in reference lists, in-text citations, and within the articles themselves (Callahan, 2010). This resulted in rich data collection that transcended the online database search results.

As a result, there were twenty-four articles identified that related to Liminal Leadership published between 1988 and 2018 to be included in the analysis. The lack of articles prior to 1988 can be explained by the identification and evolution of the term liminality; liminality was first identified in anthropological applications (Turner, 1969) and subsequently, evolved over time to organizational life. Additionally, articles about other types of leadership theories; path-goal leadership, transformational leadership, authentic leadership, global leadership, and virtual leadership, were amassed in order to compare and contrast them with Liminal Leadership. A content analysis was conducted to identify themes stemming from comparison between these theories and Liminal Leadership. The findings of the content analysis of different leadership theories, allowed a conceptualization of Liminal Leadership compared to those major leadership theories that had similar context.

The Liminal Leadership Model that was conceptualized from the integrated literature was sent to an expert panel. This panel reviewed the model and suggested revisions. Based on their recommendations, the solidified model was formalized. It comprised four dimensions and twenty-seven characteristics (Shaw VanBuskirk, Lim, & Jeong, 2019). The final model is presented in Table 3 below.

**Table 3**

*Four Dimensions and Characteristics of Liminal Leadership Model*

Dimensions	Characteristics
Intrinsic characteristics	<ul style="list-style-type: none"> <li>• Comfortable with ambiguity (Mathews, 2016).</li> <li>• Intrinsically motivated (Trépanier et al., 2012).</li> <li>• Self-reflexivity, self-regulation, and self-aware (Avolio et al., 2009).</li> <li>• Emotional intelligence and resiliency (Burns, 2003).</li> <li>• Mindfulness (Weick &amp; Sutcliffe, 2011)</li> <li>• Strategic perspective (Levy et al., 2007)</li> <li>• Cognitive complexity (Weick, 1979)</li> </ul>
Adaptive characteristics	<ul style="list-style-type: none"> <li>• Adapt to the followers, groups, context and situation (Northouse, 2007).</li> <li>• Customized communication by generation, across departments, and geographical proximity (Schmidt, 2014).</li> <li>• Maintain the status quo in an unstable or rapidly changing situation (Richardson, 2002).</li> <li>• Rapidly bounce back and overcome turbulent conditions (Denhardt &amp; Denhardt, 2010).</li> <li>• Understand its current situation and develop customized responses that reflect that understanding (Lengnick-Hall &amp; Beck, 2005).</li> <li>• Predict changes to create new opportunities (Lengnick-Hall et al., 2011).</li> <li>• Develop a repertoire of routines to respond to unexpected changes (Lengnick-Hall &amp; Beck, 2005).</li> <li>• Cultural intelligence (Levy et al., 2007).</li> </ul>

Directive characteristics	<ul style="list-style-type: none"> <li>• Cast a vision of the organizational goals for their followers (Bolman &amp; Deal, 2008).</li> <li>• Information sharing and sense-making to aid the followers (Weick &amp; Sutcliffe, 2011).</li> <li>• Establish a standard of behavior and communication for their followers and groups (Zigurs, 2003).</li> <li>• Facilitate communication exchanges between group members (Pontefract, 2014).</li> <li>• Engage in transactional exchanges when necessary (Northouse, 2007).</li> <li>• Provide motivation and inspiration to encourage goal attainment (House, 1996)</li> </ul>
Relational characteristics	<ul style="list-style-type: none"> <li>• Build personal relationships (Cogliser &amp; Schriesheim, 2000).</li> <li>• Frequently communicate from a professional and personal perspective (Schmidt, 2014).</li> <li>• Focus on improving their follower's performance and personal development (Conger 1999)</li> <li>• Openly express authentic emotions appropriate to the context (Avolio et al., 2009).</li> <li>• Cosmopolitanism or state of mind oriented toward the other; seeks to reconcile the familiar with the foreign (Levy et al., 2007)</li> <li>• Use of symbols, stories, and rituals to create community (Bolman &amp; Deal, 2008).</li> </ul>

### **Generate an Item Pool**

The dimensions and characteristics of the Liminal Leadership Model outlined in Table 2 were used to generate survey items. Existing instruments that measure constructs similar to those noted in Liminal Leadership were evaluated for inclusion. Reference was made to the comparable leadership theory for each characteristic before evaluating the essence of the context for each item. Secondly, items selected were garnered for the larger applicability to liminal leaders. It was recommended that a broad item pool be generated to allow for a broad content range that can potentially capture the target construct and measure it (Clark, Watson & Butcher, 1995). The development of an initial pool that was broad also aided with internal consistency and reliability which allowed for focused choices in item selection that correlate to each other and also to the latent variable measured (DeVellis, 2003).



The integrated literature review resulted in the emergence of characteristics in four dimensions; adaptive characteristics, directive characteristics, relational characteristics, and intrinsic leadership characteristics. The corresponding characteristics to each dimension provided a breadth of possible questions for the item pool. The initial items were created to measure the extrinsic and intrinsic characteristics within the four dimensions. Demographic items were also included. The survey was crafted utilizing Qualtrics, an online survey plan software. Qualtrics offered a convenient, cost-efficient means of data collection. As a result of the need to design a customized survey for this research purpose, validity and reliability needed to be established for the survey instrument (Creswell, 2014).

### **Determine Format for Measurement**

The survey included questions with responses on a Likert scales (Lomax & Hahs-Vaughn, 2012). The Likert Scale was chosen as the most appropriate option for this research because it allowed subjects to indicate across a continuum (DeVellis, 2003) their agreement, or lack-there-of, with the survey statement items. The survey items asked participants to respond to questions that reflect personal traits, values, behaviors, and characteristics. Demographic items included were age, race, gender, educational attainment and professional position. The items concerning race allowed respondents to check all options that they wish, and the gender items provided a male, female, and other response option.

### **Have the Initial Item Pool Reviewed by an Expert Panel**

The proposed survey items were sent to an expert panel for review. The feedback received from this panel of six leadership scholars was utilized to refine the survey questions. The final instrument was reviewed prior to distribution by Doo Hun Lim, PhD.

### **Consider Inclusion of Validation Items**

DeVellis (2003) suggests including validation items to aid in construct validity. Three validated scales were used for this purpose: The Global Transformational Leadership Scale, The Brief Resilience Scale, and the ENTRELEAD Scale were included at the end of the survey items. The Global Transformational Leadership Scale is a brief, seven item, one factor, scale that provides, “a broad assessment of transformational leadership” (Carless, Wearing, & Mann, 2000, p. 402), and has satisfactory reliability and construct validity. The Brief Resilience Scale is a 6 item, unitary construct which claims to be the only measure that specifically assesses resilience at its most basic meaning as defined by Agnes (2005): to bounce back or recover from stress (Smith, Dalen, Wiggins, Tooley, Christopher, & Bernard, 2008). It also demonstrated satisfactory reliability and validity. The final scale, ENTRELEAD Scale, is an eight item, one factor, instrument that measures the ability to influence group members toward entrepreneurial opportunities (Renko, El Tarabishy, Carrud, & Brannback, 2015). Like the previous two scales, it has satisfactory reliability and validity.

### **Administer Items to a Development Sample**

According to literature, the ideal size of the population would be 450-500 participants thus allowing for the evaluation of the findings. This was to be split into two groups. The first, with an anticipated 150-200 respondents, was to be used to conduct Exploratory Factor Analysis and the second group, comprising 250-300 respondents, was to be used for Confirmatory Factor Analysis. However, when data analysis occurred, necessary adjustments were dictated by the data gathered. Thus, two samples were drawn. The first sample comprising 333 respondents was used for exploratory factor analysis and the second sample of 512 respondents was used for confirmatory factor analysis.

### **Population and Sample**

The survey instrument was crafted in Qualtrics. It included the Liminal Leader Scale Instrument, Demographic questions, Global Transformational Leadership Instrument, the Brief Resiliency Scale and the ENTRELEAD scale. Respondents were recruited in a three-stage process. Each stage had the following message in some form: “I am researching an adaptive leadership paradigm for my doctoral dissertation and would value your input if you lead in a situation that requires you to adapt to differing contexts, work groups, generations, cultures, ethnicities, languages, labor laws, or time zones. Follow the link below to provide your insight into this important research” (Appendix A). The link to the Qualtrics survey followed.

Once the survey was accessed through the link, the participant was asked to read the brief description and consent to the study. The next screen served as the determinant of their identification as a liminal leader. The screen would ask participants to answer the following question.

Do you lead:

- A group that is assembled for a specific project before being dispersed?
- A group where members rotate in and out?
- A group comprised of subject matter experts from multiple disciplines?
- A group with three or more generations represented?
- A group with multiple cultures or ethnicities?
- A group that speak more than two languages?
- A group that spans multiple time zones?
- A group that spans multiple countries?
- A group that is governed by multiple labor laws?
- None of the above

If any of the first nine items were chosen, the individual was directed into the actual survey instrument. If the last statement was chosen, the individual received a screen that thanked them for their participation, and they were not directed to the survey.

In the first stage, an email was sent to individuals known within the researcher's personal network inviting them to participate. The email also used the snowball technique asking these respondents to send the survey on to those they knew who lead in a similar manner. The qualifying questions served to screen those who qualify and those who do not qualify based on the defined parameters of Liminal Leadership.

The second stage required the survey to be distributed through Leadership groups on Social Networking platforms such as Linked IN and, on the researcher's personal social media. Again, the qualifying questions filtered those who did not meet the parameters of Liminal Leadership.

The final stage utilized mTurk, an online data collection site. The researcher created a page on the mTurk website, posted the invitation, and provided the survey link. Respondents on this site were paid fifty cents for their response. The use of mTurk has been found to have similar demographics to samples from online panels, to contain more diversity than college student samples that are often utilized, and has a significantly lower cost for comparable data (Buhrmester, Kwang, & Goslin, 2011). More recent research claims that mTurk is a powerful tool in accessing diverse sets of participants and yields results that are as good or better than traditional means (Farrell, Grenier, & Leiby, 2019; Hauser & Schwarz, 2016; Hunt & Scheetz, 2019). Finally, evidence demonstrates that respondents on MTurk are more attentive to instructions on surveys than were college students and other online subject pools (Hauser & Schwarz, 2016).

### **Data Screening**

Prior to analysis taking place, the data was reviewed. The data was examined for accuracy, missing data, outliers, normality (multivariate and univariate), linearity, singularity, and multicollinearity (Tabachnick & Fidell, 1996).

### **Missing Data**

Missing data happens when survey respondents fail to complete the questionnaire. The amount of missing data is not as important as the pattern (Tabachnick & Fidell, 1996). In fact, Kline (2016) believes that missing data values of less than 5% may not have significant impact on the results.

Missing data can be placed into three categories. Missing completely at random (MCAR) is not dependent on any variable for the missingness. Missing at random called ignorable non-response (MAR) suggests that a missing variable is related to another. Missing not at random or non-ignorable (MNAR) suggest the missingness is dependent on response bias (Raghunathan, T., 2004; Schumacker & Lomax, 2016; Tabachnick & Fidell, 1996). Missing data was discouraged by the design of the survey on Qualtrics. Respondents were required to complete the questions before they could advance to the next screen. Most of the discarded responses were due to the cessation of activity early in the survey. The responses that were only missing the ENTRELEAD scale were included at the researchers' discretion. This decision was made on the basis that respondents could come from public, non-profit, or faith-based organizations where entrepreneurship did not reflect their lived experiences.

### ***Outliers***

Outliers are scores that are vastly different from the other scores within a given data set. Outliers have the potential to alter the analysis results. It has been stated that an outlier may be

determined by three standard deviations from the mean (Kline, 2016). Most statistical software packages have methods to detect outliers (Schumacker & Lomax, 2016).

### ***Linearity***

Linearity can be determined by using a scatter plot which demonstrates increasing or decreasing linearity between the coordinate pairs can be detected. Furthermore, the presence of curvilinear data decreases the magnitude of the Pearson correlation coefficient which could result in a zero correlation (Schumacker & Lomax, 2016). Tabachnick and Fidell (1996) suggest using a bivariate scatter plot to inspect for linearity. An oval shaped scatter plot indicates linearity.

### ***Normality***

The normality of a variable can be determined by using graphical or statistical methods. A normal distribution will have a zero value of the skewness and kurtosis (Tabachnick & Fidell, 1996). Alpha levels can be used in small to moderate samples, but a large sample will require the research to inspect the shape of the distribution. A frequency histogram can also be used to evaluate normality.

### ***Multicollinearity and singularity***

Multicollinearity and singularity occur when the variable is highly (.90 or greater) or perfectly correlated. Tabachnick and Fidell (1996) believe that multicollinearity and singularity result in logical and statistical problems. Logically, the use of redundant variables in the same analysis is problematic. Statistically, singularity or multicollinearity is problematic because a matrix inversion is used in the calculation of the regression coefficients. If singularity exists, the inversion is impossible, and if multicollinearity exists the result is an unstable inversion.

Most statistical software programs seek to protect against multicollinearity and singularity by computing the squared multiple correlations (SMC) of the variable when it serves

as the dependent variable which is predicted by the rest of the independent variables (Tabachnick & Fidell, 1996). A high SMC suggests the variable is highly related to the other variables in the set resulting in multicollinearity. A SMC of 1 indicates the variable is perfectly related to others in the set resulting in singularity. Tolerance, a related concept, which is the proportion of a variable's variance not accounted for by the other independent variable, is calculated by  $1 - \text{SMC}$ . Many programs convert the SMC values for each variable to tolerance ( $1 - \text{SMC}$ ) and do not allow a variable to enter the regression model if tolerance is too low (Tabachnick & Fidell, 1996). The impact of multicollinearity and singularity affects the strength of analysis. As a rule of thumb, two variables that correlate with each other at rate of .70 or above would not be included in the analysis.

### ***Additional data preparation***

Data in categories where an open response was requested were coded into a nominal response scale prior to analysis. The questions asking year of birth, industry, and length of employment were coded into a new variable. Criteria was determined prior to the coding in order to clearly define the outputs.

The first category, year of birth, was coded based on the generations identified in the literature review. No response, or a response other than a year or number, was coded as 0. Those stating 1945 or before were coded 1 for Traditionalist. Responses that listed year of birth between 1946 and 1964 were coded 2 for Boomers. Answers listing the years 1965 to 1980 were coded 3 for Gen Xers. Those who stated they were born between 1980 and 1994 were coded 4 for Millennials. Finally, those listing a birth date after 1994 were coded 5 for Gen Z. These designations follow the dates listed in the literature review with the exception of the end of the Millennial generation and the beginning of the Gen Z. Literature shows a variance in what

researchers believe this date to be somewhere between 1990 and 2000 so for this research the difference was split at 1994.

The category for industry was coded based on five economic sectors (Rosenberg, 2019). The primary sector includes those portions of the economy that extract or harvests raw materials and basic foods. This would include agriculture, mining, forestry, fishing, and hunting. Primary sector responses were coded 1 for analysis. The secondary sector, coded 2, produces finished products from the raw materials and basic foods obtained in the primary sector. Examples of secondary sector would include metalworking, automobile production, utilities, and aerospace manufacturing. The third sector, or tertiary sector, is also known as the service industry, and was coded 3. Included in this category are retail and wholesale sale, transportation, media, tourism, insurance, banking, health care, and law. The fourth sector, the quaternary sector, was coded 4 and is sometimes known as the knowledge economy sector. Government, cultural activities, research, education, and information technology are included in this sector. The fifth sector, the quinary sector, was coded 5. This sector includes the highest level of decision making. Examples would be top executives or officials in government, science, nonprofits, universities, media, and health care. Police and fire protection may be included as aspects of public service. Any missing response in this category was coded 0. These categories begin with utilization of raw goods and move to more refinement of the goods. The sectors indicate increasing distance from the natural resource stage (Rosenberg, 2019). It is important to note that industry sectors definitions vary by country and the definitions offered here reflect norms in the United States. For this reason, no analysis was carried out using industry sector data.

### **Psychometric Evaluation**



Psychometrics is a subspecialty of social and behavioral measurement that seeks to provide meaning to intangible phenomenon (DeVellis, 2003). Liminal Leadership is a construct that is well suited for psychometric evaluation. The aim of this research was to develop a valid and reliable scale using the statistical analysis associated with this type of research in the social sciences. Items were constructed to accomplish this aim.

### **Validity**

Establishing initial scale validity was of utmost importance in this research. Validity “is inferred from the manner in which a scale was constructed, its ability to predict specific events, or its relationship to measure of other constructs” (DeVellis, 2003, p. 49). Validity concerns whether the variable is “the underlying cause of item covariation” (DeVellis, 2003, p. 49).

Construct validity was used because it was directly concerned with the relationship between the theoretical relationship of a variable to other variables, “It is the extent to which a measure “behaves” the way that the construct it purports to measure should behave with regard to established measures of other constructs” (DeVellis, 2003, p. 53). Western and Rosenthal (2003) advise that construct validity is at the heart of a study variables are not observable, “Researchers typically establish construct validity by presenting correlations between a measure of a construct and a number of other measures that should, theoretically, be associated with it (convergent validity) or vary independently of it (discriminant validity)” (Western & Rosenthal, 2003, p. 608). Construct validation is “involved whenever a test is to be interpreted as a measure of some attribute which is not operationally defined” (Chronbach & Meehl, 1955, p. 282, as quoted by Harris, 2015). Construct validation can also be accomplished by the use of

exploratory factor analysis. Harris (2015) reports that many scholars, including Chronbach and Meehl, supported the use of exploratory factor analysis when developing an instrument.

### **Factor Analysis**

Factor analysis was conducted for summarization of data, data reduction, and validation of the multiple dimensions of Liminal Leadership. Exploratory Factor Analysis (EFA) was conducted using SPSS software and *Using SPSS for Windows and Macintosh: Analyzing and Understand Data* by Green and Salkind (2011) was used to support this process. This method was chosen because Exploratory Factor Analysis (EFA) scans the inter-item correlations, looking for groups of items that are strongly correlated with each other (Furr, 2011). These sets of highly correlated items constitute a factor. Hair, Anderson, Tatham, and Black define factors as “a linear combination (variate) of the original variables. Factors also represent the underlying dimensions (constructs) that summarize or account for the original set of observed variables” (1998, p. 89). In this case, the dependent variable, Liminal Leadership, was a latent variable, meaning it could not be measured directly. While latent variables cannot be measured directly, they can be represented by a set of variables.

*Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy*, was run to determine if the use of factor analysis is appropriate. A KMO index of .80 or above was the goal for this research. This level is considered meritorious or excellent. KMO measures sampling adequacy for each variable in the model and for the model as a whole (Hair, Anderson, Tatham, & Black, 1998).

Exploratory factor analysis was conducted on the initial scale items using *principal components analysis (PCA)*. Principal components analysis was utilized because the primary purpose was to identify and compute composite scores for the factors underlying the Liminal

Leadership Scale. All 43 items of the LLS were manipulated to Principal Component Analysis (PCA) utilizing the Statistical Package for the Social Science (SPSS) Version 19.0 (Kho et al., 2015). While some debate the use of principal components analysis versus principal axis factoring to support construct validity, the two methods are not significantly different and are frequently used interchangeably in studies similar to this one (Field, 2005). The use of principal components analysis is also supported by Meyers, Gamst, and Guarino (2006) who note little variance when factor rotations was used.

**Table 4**

*Items for Exploratory Factor Analysis*

<b>Subscales</b>	<b>Survey Item</b>
Adaptive	I adapt to my followers. I adapt to the situation in which I find myself. I adapt to group behavioral norms. How I communicate with others depends on age and culture. How I communicate with others is determined by their communication preferences. I quickly adjust to a changing environment. I recover quickly from turbulence in the workplace. I read the situation quickly. I adapt my responses to the situation presented. I anticipate change. I see change as a new opportunity. I adapt my interaction to the cultural norms of my followers.
Directive	I communicate my plans to my followers. I outline each step in the goal. I explain my need for requests made. I share information with my followers. I assist my followers in making sense of what is known. I set a standard of behavior for my followers. I set communication patterns for my followers. I encourage followers to communicate with each other professionally. I direct followers' actions when necessary. I look for ways to motivate my followers. I try to inspire my followers to achieve the goal. I develop a personal relationship with my followers.
Relational	I communicate with my followers frequently on personal matters.

	<p>I communicate with my followers as professionals.</p> <p>I frequently talk with followers about their performance.</p> <p>I acknowledge my followers' achievements frequently.</p> <p>I develop a plan with my followers to achieve their personal development goals.</p> <p>I express appropriate emotion around my followers.</p> <p>I use social networking sites to develop relationships.</p> <p>I use social networking sites to communicate with followers.</p> <p>I acknowledge my followers' emotions.</p> <p>I enjoy solving ambiguous problems.</p> <p>I consider multiple solutions to a problem.</p>
Intrinsic	<p>I can easily choose an action when the outcome is uncertain.</p> <p>I motivate myself when needed.</p> <p>I am aware of the emotion I am feeling.</p> <p>I regulate my emotions.</p> <p>I control my thinking well.</p> <p>I see events from multiple perspectives.</p> <p>I can express myself calmly when angry or upset.</p> <p>I bounce back from unexpected events quickly.</p>

## Reliability

In psychological measurement, reliability is a paramount issue. Scale reliability being, “the proportion of variance attributable to the true score of the latent variable” (DeVellis, 2003, p. 27). These scales have items that demonstrate a high level of internal consistency in relationship to the latent variable and the statistical analysis has a minimal error rate (DeVellis, 2003).

There are two methods to be used for ensuring scale reliability. The first is a sufficiently large sample. The second method is the use of *Chronbach's alpha*, is used to establish scale reliability. Chronbach's alpha is also commonly used to test internal consistency (DeVellis, 2003). It is also useful to eliminate weak items and retain strong ones (Harris, 2015).

A Chronbach's alpha score between .70 and .80 is respectable. A score between .80 and .90 is very good (DeVellis, 2003). It is generally agreed that .70 is respectable, however, .60 could be acceptable in exploratory research such as scale development (Fabrigar, Wegener,

MacCallum & Strahan, 1999). Fabrigar, et al. also noted that when a scale has a large number of items, Chronbach's alpha can show positive correlations and researchers should construct more rigorous requirements.

Item deletion did not occur until after exploratory factor analysis, confirmatory factor analysis, assessment of scale reliability, and correlation analyses was completed. Length of scale was an important consideration. While respondents prefer shorter scales, longer scales tend to be more reliable (DeVellis, 2003).

### **Validation**

The second sample of 512 respondents was used for validation of the findings from the exploratory factor analysis undertaken on sample one. Confirmatory factorial analysis (CFA) was used at this stage utilizing the AMOS software package. Confirmatory factorial analysis is generally applicable when there are specific hypotheses to test (DeVellis, 2003). The use of confirmatory factor analysis was used to validate the findings from Exploratory Factor Analysis.

### **Correlation**

Correlation analyses were done on each subscale with relation to gender, generational affiliation, and culture/ethnicity. The analyses include descriptives, ANOVAs, Test of Homogeneity of Variances, and Post Hoc Test were applicable. These analyses were completed in order to evaluate the different responses to the survey questions by the participants by the categories listed and to provide further insight into the thought processes of individuals based on these criteria.

### **Summary**

This document outlines the design and methodology of a research study of Liminal Leadership that worked toward the development of a scale. It included the problem statement,

purpose statement, research questions, a description of participants, the procedures, instruments, analytical processes, and integration into a new model of leadership. A review of the literature situated the study in instances of organizational liminality. The literature also offered probable characteristics, traits, behaviors, and intrinsic processes of leaders whose situation within an organizational setting or in relationship to followers has some similarities to the positionality of a liminal leader. The study outlined began the process of assembling the various parts into a holistic model.

# CHAPTER FOUR

## Results

This chapter presents the analysis and results of the scales. The goal of this research was to operationalize Liminal Leadership and to develop a reliable and valid scale to measure the construct. This research was guided by the primary question: Can the construct of Liminal Leadership be defined and then operationalized into a valid and reliable scale? Further questions guiding the research include:

1. How do liminal leaders lead?
2. How do liminal leaders think about leading?
3. What motivates liminal leaders to lead betwixt and between?

### Description of Participants

The population sampled were individuals who self-identified as liminal leaders. The criteria for inclusion were those who lead:

- A group that is assembled for a specific project before being dispersed.
- A group where members rotate in and out.
- A group comprised of subject matter experts from multiple disciplines.
- A group with three or more generations represented.
- A group with multiple cultures or ethnicities.
- A group that speak more than two languages.
- A group that spans multiple time zones.
- A group that spans multiple countries.
- A group that is governed by multiple labor laws.

The survey was built in Qualtrics and deployed through anonymous links provided to individuals through email recruitment, social media platforms, and mTurk beginning in late June and ending in late October. The intent of this research was to draw two samples, perform Exploratory Factor Analysis on the smaller set and Confirmatory Factor Analysis on the larger set. Therefore, a date was determined to end the first sample and then allow data collection to continue for the second

sample. The first sample had 448 respondents but after data cleaning it dropped to 333. The second sample has 664 respondents with 512 remaining after data cleaning had occurred. The final total on Qualtrics showed 1,116 individuals logged into the survey. After data screening had taken place, 845 responses remained for analysis. It is vital to note that the sample is a true global sample. The data obtained from mTurk indicated that responses were gained from around the world. This is important to note because few studies, if any, have utilized a true random global sample. There are also theoretical constructs that suggest this may be at the heart of the difficulties encountered in the data analysis.

### **Analysis of a Liminal Leadership Scale**

#### **Descriptive Statistics**

Descriptive Statistics were completed on each sample. All items were screened for distribution, skewness, and any outliers that might be present. Distribution and skewness were normal, and no outliers were noted.

**Table 5**

*Descriptive Statistics: Gender*

Sample	Frequency	Percent
<u>Sample 1</u>		
Male	180	54.1
Female	143	42.9
No response	10	3.0
Total	333	100.0
<u>Sample 2</u>		
Male	306	59.8
Female	190	37.1
No response	16	3.1
Total	512	100.0

**Table 6**



*Descriptive Statistics: Generation*

Sample	Frequency	Percent
<u>Sample 1</u>		
Traditional	1	.3
Boomer	22	6.6
GenX	36	10.8
Millennial	141	42.5
GenZ	54	16.3
No Response	78	23.2
Total	333	100.0
<u>Sample 2</u>		
Traditional	0	0
Boomer	19	3.7
GenX	59	11.5
Millennial	252	49.2
GenZ	91	17.8
No Response	91	17.8
Total	512	100.0

**Table 7**

*Descriptive Statistics: Culture/Ethnicity*

Sample	Frequency	Percent
<u>Sample 1</u>		
Caucasian/White	111	33.5
Indian Sub-continent	125	37.5
Spanish, Mexican, Cuban, Central or South American	13	3.9
African American/Black	11	3.3
Asian	56	16.8
American Indian or Alaskan Native	7	2.1
No response	10	3.0
Total	333	100.0
<u>Sample 2</u>		
Caucasian/White	163	31.8
Indian Sub-continent	148	28.9
Spanish, Mexican, Cuban, Central or South American	22	4.3
African American/Black	25	4.9
Asian	115	22.5
American Indian or Alaskan Native	23	4.5
No response	16	3.1
Total	512	100.0

**Table 8***Descriptive Statistics: Education*

Sample	Frequency	Percentage
<u>Sample 1</u>		
High School Diploma	14	4.2
Associate Degree	26	7.9
Bachelor Degree	204	61.6
Graduate Degree	79	23.9
No response	8	2.4
Total	331	100.0
<u>Sample 2</u>		
High School Diploma	40	8.0
Associate Degree	50	9.9
Bachelor Degree	320	63.5
Graduate Degree	87	17.2
No response	7	1.4
Total	504	100.0

Descriptive statistics were then completed on all items to check for distribution, skewness, and any outliers that might be present. Distribution and skewness were normal, and no outliers were noted.

**Initial Exploratory Factor Analysis on Sample 1**

Initially, an exploratory factor analysis was conducted on the full set of survey items, with Table 9 presenting the initial eigenvalues and rotations sums of squared loadings on the original and rotated factor solution. This and all following exploratory factor analyses were conducted solely on Sample 1. Using the Kaiser criterion, the first seven factors would be retained as these first seven factors all have eigenvalues above one. In addition, these first seven factors explain slightly above 63% of the variance in this set of items.

**Table 9***Exploratory Factor Analysis on all Scale Items: Eigenvalues and Variance Explained*

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Var.	Cum. %	Total	% of Var.	Cum. %
1	30.010	46.891	46.891	12.534	19.585	19.585
2	3.362	5.253	52.144	7.726	12.072	31.657
3	1.923	3.004	55.148	4.565	7.133	38.790
4	1.737	2.714	57.862	4.476	6.994	45.784
5	1.397	2.184	60.045	4.274	6.679	52.463
6	1.189	1.857	61.903	3.986	6.227	58.690
7	1.045	1.633	63.536	3.101	4.846	63.536
8	.968	1.513	65.048			
9	.917	1.432	66.480			
10	.878	1.371	67.852			
11	.818	1.278	69.130			
12	.790	1.234	70.364			
13	.767	1.199	71.562			
14	.723	1.129	72.692			
15	.699	1.091	73.783			
16	.674	1.053	74.837			
17	.647	1.011	75.848			
18	.644	1.006	76.854			
19	.629	.982	77.836			
20	.603	.943	78.779			
21	.577	.902	79.680			
22	.558	.872	80.553			
23	.543	.849	81.402			
24	.515	.805	82.207			
25	.515	.804	83.011			
26	.486	.759	83.770			
27	.470	.734	84.504			
28	.464	.724	85.228			
29	.445	.696	85.924			
30	.431	.674	86.598			
31	.419	.655	87.253			

32	.397	.620	87.873
33	.394	.615	88.488
34	.385	.602	89.090
35	.373	.582	89.673
36	.362	.565	90.238
37	.354	.554	90.792
38	.352	.549	91.341
39	.338	.528	91.869
40	.316	.493	92.362
41	.308	.481	92.843
42	.300	.468	93.311
43	.289	.452	93.763
44	.279	.437	94.199
45	.270	.422	94.621
46	.263	.411	95.033
47	.254	.397	95.429
48	.250	.390	95.820
49	.239	.373	96.193
50	.223	.348	96.541
51	.213	.333	96.875
52	.206	.322	97.196
53	.198	.310	97.506
54	.185	.289	97.796
55	.178	.279	98.075
56	.172	.268	98.343
57	.165	.257	98.600
58	.157	.245	98.845
59	.146	.227	99.073
60	.138	.215	99.288
61	.125	.196	99.483
62	.121	.189	99.672
63	.109	.171	99.843
64	.101	.157	100.000

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Figure 6 presents the scree plot associated with this analysis. The knee of the curve appears to be at approximately the point at which five factors would be retained, which would serve as the suggestion for the total number of factors to retain on the basis of this plot.

**Figure 6**

*Scree Plot for Initial Exploratory Factor Analysis*

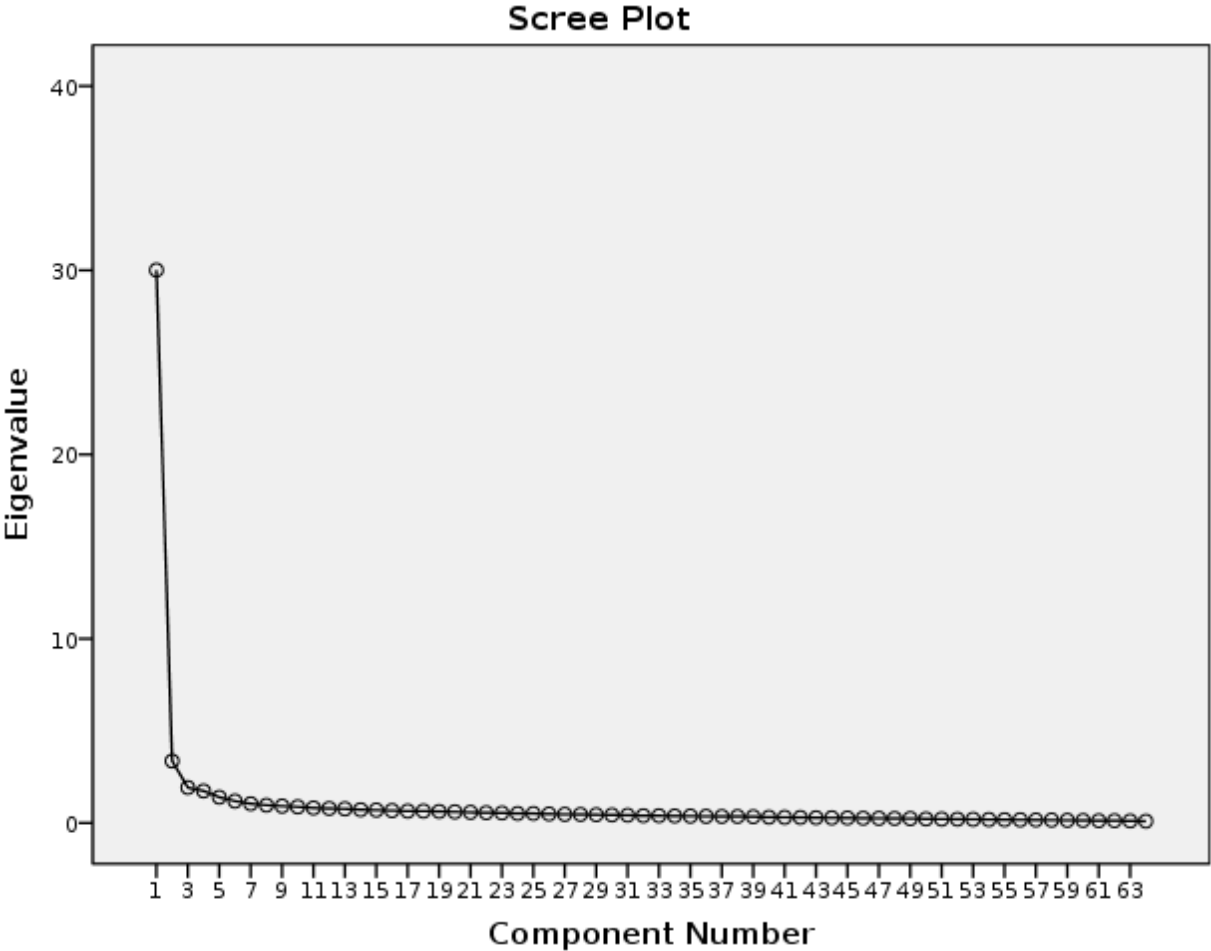


Table 10 presents the results of the varimax rotated factor loadings resulting from this analysis. While the items are included in separate blocks in Table 10 these results correspond with a single exploratory factor analysis that was conducted on this entire set of items. As

shown, these results are very diffuse; these individual sets of items in question do not clearly load on separate and distinct factors. The survey which comprised the Liminal Leadership Scale, the Global Transformational Leadership Scale, The Brief Resilience Scale, and the ENTRELead Scale had 63 items for analysis. The total responses for this analysis was 333 which may have been too few in number to gain accurate readings. For this reason, additional exploratory factor analyses were conducted separately by subscale.

**Table 10**

*Exploratory Factor Analysis on all Scale Items: Varimax Rotated Factor Loadings*

Measure	1	2	3	4	5	6	7
A1	.183	.629	.197	.096	.250	.179	-.023
A2	.567	.542	.003	.093	.314	.038	.096
A3	.183	.467	.098	.412	.297	.166	-.003
A4	.253	.617	.096	.005	.008	.249	.316
A5	.284	.568	.286	.230	-.021	.247	.190
A6	.426	.597	.146	.112	.082	.005	.184
A7	.123	.555	.430	.251	.078	.126	.077
A8	.431	.494	.155	.143	.195	.072	.090
A9	.354	.601	.143	.210	.291	.041	.141
A10	.359	.475	.066	.320	.297	.011	.115
A11	.342	.549	.138	.201	.304	.130	.118
A12	.379	.604	.186	.151	.088	.144	.200
D1	.686	.330	.172	.065	.135	.092	-.091
D2	.384	.335	.170	.470	.199	.115	.154
D3	.644	.383	.183	.225	-.034	.121	.108
D4	.461	.403	.068	.528	.081	.094	.162
D5	.577	.417	.176	.294	-.027	.047	.207
D6	.463	.423	.182	.423	.157	.047	.114
D7	.497	.513	.180	.113	.118	.110	-.103
D8	.406	.454	.089	.336	.305	.008	.144
D9	.581	.409	.125	.169	.228	.057	.109
D10	.385	.465	.090	.463	.220	-.012	.170
D11	.622	.395	.157	.258	.037	-.029	.256
R1	.675	.194	.129	.158	.221	.261	-.045
R2	.064	.110	.280	.492	.147	.551	-.061
R3	.163	.130	.263	.350	.007	.527	.069
R4	.128	.112	.459	.411	-.002	.514	.033

R5	.650	.387	.102	.237	.086	.028	.129
R6	.311	.254	.221	.566	.239	.235	.103
R7	.504	.287	.210	.243	.154	.014	.290
R8	.354	.273	.255	.310	.357	.228	.184
R9	.590	.236	.205	.363	.130	.183	.088
R10	.455	.253	.301	.433	.096	.133	.281
I1	.202	.375	.224	.116	.553	.139	.120
I2	.676	.188	.051	.143	.273	.139	.101
I3	.287	.181	.487	.199	.431	.146	.123
I4	.663	.186	.321	.070	.120	.039	.196
I5	.484	.231	.335	.347	.110	.082	.186
I6	.575	.252	.319	.148	.153	.129	.140
I7	.385	.257	.406	.293	.179	.081	.235
I8	.633	.288	.210	.100	.153	.131	.249
I9	.264	.309	.441	.306	.320	.014	.119
I10	.445	.288	.533	.098	.182	.038	.154
GTL1	.359	.275	.247	.289	.510	.086	.158
GTL2	.770	.140	.114	.148	.274	.089	.108
GTL3	.478	.223	.049	.412	.308	.073	.302
GTL4	.616	.269	.241	.042	.089	.054	.452
GTL5	.410	.274	.208	.349	.187	.124	.466
GTL6	.658	.191	.224	.190	.146	.088	.208
GTL7	.467	.262	.212	.375	.257	.007	.347
BRS1	.263	.269	.566	.173	.445	.101	-.052
BRS2	.125	.074	.039	-.008	.176	.844	-.087
BRS3	.244	.181	.651	.120	.311	.104	.109
BRS4	.075	.097	-.007	-.008	.114	.844	.170
BRS5	.238	.132	.702	.050	.093	.186	.260
BRS6	.028	.116	.054	.042	.118	.809	.099
E1	.141	.156	.203	.141	.690	.283	.161
E2	.449	.070	.181	.010	.501	.325	.158
E3	.146	.114	.282	.231	.400	.251	.363
E4	.455	.154	.255	.065	.327	.160	.449
E5	.493	.253	.246	.198	.199	.048	.483
E6	.600	.123	.185	.170	.268	.104	.372
E7	.335	.176	.221	.273	.339	.088	.501
E8	.384	.284	.148	-.002	.374	.126	.421

A = Adaptive, D = Directive, R = Relational, I = Intrinsic, GTL = Global Transformational Leadership, BRS = Brief Resilience Scale, E = ENTRELEAD

*Initial exploratory factor analysis on sample 1: by subscale*

Following the initial factor analysis conducted, a series of additional exploratory factor analyses were conducted separately by subscale. Initially, this set of analyses used the eigenvalues as the standard by which the number of factors to be retained was decided, and using this criterion, in several cases two factors were retained instead of one. In the aim of finding a single factor solution with regard to each subscale, a second set of exploratory factor analyses were conducted in which the number of factors to retain was constrained to be equal to one in each case. The results presented in this section relate to this final set of exploratory factor analyses. In addition, a comparison of these two sets of results did not suggest that two factor solutions were superior to single factor solutions in any case.

First, Table 11 presents the results of the exploratory factor analysis conducted on subscale A. Subscale A measures Adaptive leadership which refers to the behaviors a leader utilizes to adapt to the followers, groups, context, and situation. These results found only the initial factor to have an eigenvalue above one, suggesting that only this first factor would be retained. This initial factor also explained above 55% of the variance in this set of items. The KMO measure was .958 and Bartlett’s Test of Sphericity was significant ( $p < .01$ ), indicating factorability of items and independence of items. The subscale had good internal consistency, with a Chronbach’s alpha reported at .926.

**Table 11**

*Exploratory Factor Analysis on Adaptive: Eigenvalues and Variance Explained*

Component	Total	% of Var.	Cum. %
1	6.634	55.286	55.286
2	.779	6.488	61.774
3	.655	5.456	67.230
4	.582	4.852	72.082



5	.518	4.317	76.399
6	.507	4.221	80.620
7	.457	3.809	84.429
8	.440	3.671	88.100
9	.403	3.357	91.456
10	.382	3.185	94.641
11	.350	2.918	97.558
12	.293	2.442	100.000

Table 12 presents the unrotated factor loadings associated with this analysis. All factor loadings were positive and strong, with all of these factor loadings approaching .700 or above. These results indicate that a single factor solution would be appropriate, and that these items all load strongly upon a single factor.

**Table 12**

*Factor Loadings: Adaptive*

Item	Factor Loading
1	.685
2	.796
3	.677
4	.700
5	.743
6	.763
7	.703
8	.738
9	.798
10	.725
11	.782
12	.798

Next, Table 13 presents the eigenvalues and percentages of variance explained with respect to subscale D. Subscale D measures Directive leadership which refers to the behaviors a leader utilizes to create a ‘generalized other’. These results also found only the first factor to have an eigenvalue above one, with this first factor explaining close to 62% of the variance in this set of 11 items. Based on the Kaiser criterion, only the first factor would be retained. The KMO measure was .952 and Bartlett’s Test of Sphericity was significant ( $p < .01$ ), indicating factorability of items and independence of items. The subscale had good internal consistency, with a Chronbach’s alpha reported at .937.

**Table 13**

*Exploratory Factor Analysis on Directive: Eigenvalues and Variance Explained*

Component	Total	% of Var.	Cum. %
1	6.789	61.718	61.718
2	.732	6.657	68.375
3	.517	4.705	73.079
4	.501	4.552	77.631
5	.473	4.299	81.930
6	.438	3.985	85.915
7	.420	3.817	89.732
8	.315	2.860	92.592
9	.290	2.635	95.227
10	.274	2.490	97.717
11	.251	2.283	100.000

Table 14 presents the unrotated factor loadings associated with this analysis. All factor loadings were positive and strong, with these factor loadings above .700. These results also suggest that this set of items load strongly upon a single factor, and that this is an appropriate factor structure for this subscale.

**Table 14***Factor Loadings: Directive*

Item	Factor Loading
1	.754
2	.758
3	.812
4	.802
5	.813
6	.807
7	.723
8	.752
9	.793
10	.782
11	.839

Table 15 presents the eigenvalues and percentages of variance explained relating to subscale R. Subscale R measures Relational leadership which refers to the behaviors a leader utilizes to build relationship with the followers. Using the Kaiser criterion, the first two factors would be retained, with the initial factor having an eigenvalue of 5.216, and the second eigenvalue have a much lower eigenvalue of 1.303. In addition, the initial factor was found to explain slightly over 52% of the variance in these items, while the first two factors were found to explain a cumulative percentage of slightly above 65% with respect to these items. The KMO measure was .901 and Bartlett's Test of Sphericity was significant ( $p < .01$ ), indicating factorability of items and independence of items. The subscale had good internal consistency, with a Chronbach's alpha reported at .894.

**Table 15***Exploratory Factor Analysis on Relational: Eigenvalues and Variance Explained*

Component	Total	% of Var.	Cum. %
1	5.216	52.163	52.163
2	1.303	13.032	65.194
3	.630	6.305	71.499
4	.571	5.713	77.212
5	.497	4.972	82.184
6	.439	4.387	86.572
7	.412	4.122	90.694
8	.363	3.628	94.322
9	.297	2.967	97.288
10	.271	2.712	100.000

Table 16 presents the unrotated factor loadings associated with this analysis, with this analysis constraining the total number of factors to be retained to be equal to one. These results still found strong and positive factor loadings in all cases, with all factor loadings found to be above .600. While the total percentage of variance explained is slightly low when only retaining a single factor, with this measure being above 50% and with the factor loadings presented in Table 16 a single factor solution was felt to be appropriate in this case as well.

**Table 16**

*Factor Loadings: Relational*

Item	Factor Loading
1	.718
2	.635
3	.621
4	.661
5	.730
6	.782
7	.699
8	.755
9	.801

Table 17 presents the eigenvalues and percentages of variance explained relating to the analysis conducted with subscale I. Subscale I measures Intrinsic leadership which refers to the intrinsic processes a leader utilizes that empowers them to lead in a state of liminality. The eigenvalues indicate that only the first factor would be retained, as only this first factor has an eigenvalue above one. Additionally, this factor explains close to 56% of the variance associated with this set of items. The KMO measure was .928 and Bartlett's Test of Sphericity was significant ( $p < .01$ ), indicating factorability of items and independence of items. The subscale had good internal consistency, with a Chronbach's alpha reported at .911.

**Table 17**

*Exploratory Factor Analysis on Intrinsic: Eigenvalues and Variance Explained*

Component	Total	% of Var.	Cum. %
1	5.572	55.725	55.725
2	.890	8.899	64.623
3	.636	6.362	70.986
4	.561	5.606	76.592
5	.502	5.020	81.612
6	.457	4.566	86.178
7	.377	3.767	89.945
8	.374	3.740	93.685
9	.331	3.315	97.000
10	.300	3.000	100.000

Table 18 presents the unrotated factor loadings associated with this analysis. As in the previous analyses, these factor loadings were positive and strong, with these factor loadings

above .600. These results also suggest that this set of items load strongly upon a single factor, and that this is an appropriate factor structure for this subscale.

**Table 18**

*Factor Loadings: Intrinsic*

Item	Factor Loading
1	.659
2	.738
3	.734
4	.758
5	.767
6	.774
7	.772
8	.773
9	.726
10	.756

Table 19 presents the eigenvalues and percentages of variance explained relating to the analysis conducted with subscale GTL. Subscale GTL measures the Global Transformational Leadership (Carless, Wearing, & Mann, 2000) scale inserted for validity purpose. The eigenvalues indicate that only the first factor would be retained, as only this first factor has an eigenvalue above one. Additionally, this factor explains close to 65% of the variance associated with this set of items. The KMO measure was .915 and Bartlett’s Test of Sphericity was significant ( $p < .01$ ), indicating factorability of items and independence of items. The subscale had good internal consistency, with a Chronbach’s alpha reported at .911. These findings are similar the original research findings which had Chronbach’s alpha at .930 (Carless, Wearing, & Mann, 2000).

**Table 19**

*Exploratory Factor Analysis on Global Transformational Leadership: Eigenvalues and Variance Explained*

Component	Total	% of Var.	Cum. %
1	4.572	65.314	65.314
2	.615	8.786	74.100
3	.458	6.539	80.639
4	.412	5.881	86.521
5	.347	4.954	91.475
6	.337	4.819	96.294
7	.259	3.706	100.000

Table 20 presents the unrotated factor loadings associated with this analysis. All these factor loadings were positive and strong, with these factor loadings above .700. These results also suggest that this set of items load strongly upon a single factor, and that this is an appropriate factor structure for this subscale. Again, this is consistent with the original data presented by the researcher of this validation instrument with factor loadings ranging from .78 to .88 (Carless, Wearing, & Mann, 2000).

**Table 20**

*Factor Loadings: Global Transformational Leadership*

Item	Factor Loading
1	.775
2	.822
3	.798
4	.799
5	.817
6	.808
7	.836

Table 21 presents the eigenvalues and percentages of variance explained relating to the analysis conducted with subscale BRS. Subscale BRS measures the Brief Resilience Scale (Smith et. al., 2008), the second scale inserted for validity purposes. The eigenvalues indicate that two factors would remain explaining close to 75% of the variance. However, the original research maintained through rigorous testing that it was a single factor instrument, so the analysis was conducted with constraints to a single factor. The KMO measure was .749 and Bartlett’s Test of Sphericity was significant ( $p < .01$ ), indicating factorability of items and independence of items. The subscale had good internal consistency, with a Chronbach’s alpha reported at .790. The original research drew four separate samples with Chronbach’s alpha ranging between .80 and .91 which is similar to the findings of this research.

**Table 21**

*Exploratory Factor Analysis on Brief Resilience Scale: Eigenvalues and Variance Explained*

Component	Total	% of Var.	Cum. %
1	2.928	48.793	48.793
2	1.568	26.130	74.923
3	.510	8.498	83.420
4	.397	6.617	90.038
5	.329	5.479	95.516
6	.269	4.484	100.000

Table 22 presents the unrotated factor loadings associated with this analysis. Again, the factor loadings were positive and strong, with these factor loadings above .600. These results also suggest that this set of items load strongly upon a single factor, and that this is an appropriate factor structure for this subscale. It is important to note the items that were reverse coded held strong suggesting the absence of survey fatigue in the respondents. It also reflects the original findings of this second validation instrument.



**Table 22***Factor Loadings: Brief Resilience Scale*

Item	Factor Loading
1	.628
2	.763
3	.633
4	.756
5	.630
6	.763

Table 23 presents the eigenvalues and percentages of variance explained relating to the analysis conducted with subscale E. Subscale E measures the ENTRELEAD scale (Renko et. al., 2015) which was the third scale inserted for validity purposes. The eigenvalues indicate that only the first factor would be retained, as only this first factor has an eigenvalue above one. Additionally, this factor explains close to 58% of the variance associated with this set of items. The KMO measure was .905 and Bartlett's Test of Sphericity was significant ( $p < .01$ ), indicating factorability of items and independence of items. The subscale had good internal consistency, with a Chronbach's alpha reported at .893. The original research recorded Chronbach's alpha at .885 (Renko et al., 2015).

**Table 23***Exploratory Factor Analysis on ENTRELEAD: Eigenvalues and Variance Explained*

Component	Total	% of Var.	Cum. %
1	4.615	57.693	57.693
2	.780	9.755	67.448
3	.646	8.069	75.517
4	.471	5.886	81.403
5	.436	5.455	86.858
6	.412	5.145	92.003

7	.352	4.403	96.406
8	.288	3.594	100.000

Table 24 presents the unrotated factor loadings associated with this analysis. Finally, these factor loadings were positive and strong, with these factor loadings above .700. These results also suggest that this set of items load strongly upon a single factor, and that this is an appropriate factor structure for this subscale. Again, this is consistent with the original data presented by the researcher of this validation instrument.

**Table 24**

*Factor Loadings: ENTRELEAD*

Item	Factor Loading
1	.720
2	.743
3	.675
4	.796
5	.779
6	.809
7	.784
8	.761

### **Confirmatory Factor Analysis on Sample 2**

For the purposes of validation, a series of confirmatory factor analyses (CFAs) were conducted using this same factor structure on Sample 2. All CFAs were conducted in IBM Amos 23, with the initial path between the factor and the first item constrained to be equal to one such that each model was identified. In confirmatory factor analysis, good model fit and an appropriate factor structure are indicated on the basis of the following: (1) standardized estimates

above .300, (2) paths that are statistically significant at the .05 alpha level, and (3) acceptable model fit.

Table 25 presents the results of the CFA conducted on subscale Adaptive. These results indicated significant paths in all cases, with all paths in fact significant at the .001 alpha level. Regarding the standardized estimates, all values were found to be above .600. Finally, normed chi-square was below three, with both TLI and CFI above .95, and with RMSEA slightly above .05, with the 90% confidence interval found to range from .049 to .071, with statistical significance not found. This set of results strongly suggest good model fit and an appropriate factor structure.

**Table 25**

*Confirmatory Factor Analysis: Adaptive*

Path	Estimate ( <i>SE</i> )	Std. Estimate	<i>z</i>
A→A1	1.000	.694	
A→A2	1.120 (.070)	.762	16.112***
A→A3	1.038 (.068)	.723	15.328***
A→A4	.998 (.074)	.631	13.457***
A→A5	1.024 (.070)	.685	14.560***
A→A6	1.113 (.070)	.749	15.859***
A→A7	1.068 (.071)	.712	15.107***
A→A8	1.114 (.074)	.713	15.127***
A→A9	1.088 (.070)	.729	15.444***
A→A10	1.095 (.074)	.701	14.887***
A→A11	1.094 (.071)	.723	15.337***
A→A12	1.238 (.075)	.778	16.427***

*Note.* \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ ;  $\chi^2$  (54) = 153.460,  $p < .001$ , Normed  $\chi^2$  = 2.842, TLI = .955, CFI = .969, RMSEA [.049, .071] = .060,  $p = .067$ .

The following CFA was conducted with subscale Directive, with these results presented in Table 26. All paths were found to achieve statistical significance at the .001 alpha level, and

with all standardized estimates found to be above .700. With regard to model fit, normed chi-square was found to be below three, with both TLI and CFI found to approach one. The RMSEA was equal to .050, with the 90% confidence interval for this measure found to range from .037 to .063, and with the RMSEA not found to achieve statistical significance. Overall, these results suggest excellent model fit and a very appropriate factor structure.

**Table 26**

*Confirmatory Factor Analysis: Directive*

Path	Estimate (SE)	Std. Estimate	z
D→D1	1.000	.764	
D→D2	1.063 (.057)	.775	18.528***
D→D3	1.128 (.060)	.779	18.643***
D→D4	1.010 (.055)	.764	18.204***
D→D5	1.105 (.061)	.766	18.251***
D→D6	.977 (.056)	.731	17.293***
D→D7	1.068 (.060)	.747	17.730***
D→D8	.974 (.058)	.709	16.692***
D→D9	1.057 (.058)	.769	18.354***
D→D10	1.090 (.057)	.792	18.990***
D→D11	1.185 (.061)	.808	19.455***

*Note.* \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ ;  $\chi^2(44) = 100.920$ ,  $p < .001$ , Normed  $\chi^2 = 2.294$ , TLI = .976, CFI = .984, RMSEA [.037, .063] = .050,  $p = .464$ .

The following CFA was conducted with subscale Relational, with these results presented in Table 27. All paths were found to achieve statistical significance at the .001 alpha level, with all standardized estimates found to approach .600 or to be above this value. Regarding the measures of model fit calculated, these indicated room for improvement. The normed chi-square was found to be above 10, which indicates poor model fit, with TLI found to approach .800, and CFI found to approach .900. The RMSEA was found to be above .100, with its 90% confidence

interval found to range between .121 and .147, with the RMSEA found to achieve statistical significance at the .001 alpha level. While the measures of model fit did not indicate good model fit, the statistical significance of the paths and the standardized estimates were both excellent. Overall, these results suggest reasonable model fit and an appropriate factor structure.

**Table 27**

*Confirmatory Factor Analysis: Relational*

Path	Estimate ( <i>SE</i> )	Std. Estimate	<i>z</i>
R→R1	1.000	.698	
R→R2	.946 (.075)	.596	12.538***
R→R3	.999 (.078)	.606	12.742***
R→R4	.988 (.080)	.590	12.409***
R→R5	1.020 (.068)	.725	15.104***
R→R6	1.077 (.073)	.711	14.831***
R→R7	1.068 (.072)	.716	14.928***
R→R8	1.121 (.072)	.751	15.604***
R→R9	1.122 (.073)	.734	15.284***
R→R10	1.089 (.071)	.739	15.370***

Note. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ ;  $\chi^2 (35) = 355.624$ ,  $p < .001$ , Normed  $\chi^2 = 10.161$ , TLI = .793, CFI = .868, RMSEA [.121, .147] = .134,  $p < .001$ .

The following CFA was conducted on subscale Intrinsic. These results, presented in Table 28, found all paths to achieve statistical significance at the .001 alpha level, and with all standardized estimates to be above .600. Normed chi-square was below three, with both the measures of TLI and CFI found to be above .960. The RMSEA was equal to .059, with the associated confidence interval ranging between .045 and .073. Additionally, the RMSEA was not found to achieve statistical significance. The results served to indicate excellent model fit and an appropriate factor structure.

**Table 28***Confirmatory Factor Analysis: Intrinsic*

Path	Estimate ( <i>SE</i> )	Std. Estimate	<i>z</i>
I→I1	1.000	.622	
I→I2	1.025 (.076)	.723	13.524***
I→I3	1.041 (.082)	.670	12.765***
I→I4	1.142 (.082)	.750	13.894***
I→I5	1.066 (.080)	.706	13.285***
I→I6	1.097 (.080)	.738	13.739***
I→I7	1.143 (.083)	.736	13.705***
I→I8	1.043 (.077)	.726	13.572***
I→I9	1.050 (.079)	.703	13.246***
I→I10	1.233 (.086)	.789	14.414***

Note. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ ;  $\chi^2 (35) = 96.603$ ,  $p < .001$ , Normed  $\chi^2 = 2.760$ , TLI = .961, CFI = .975, RMSEA [.045, .073] = .059,  $p = .143$ .

Table 29 presents the results of the CFA conducted with subscale Global Transformational Leadership. All paths were found to achieve statistical significance at the .001 alpha level, with all standardized estimates found to be above .700. Normed chi-square was found to be slightly above four, with both the TLI and CFI found to be above .950. The RMSEA was equal to .077, with the 90% confidence interval found to range between .057 and .099, and with the RMSEA found to achieve statistical significance at the .05 alpha level. This set of results indicate excellent model fit as well as an appropriate factor structure.

**Table 29***Confirmatory Factor Analysis: Global Transformational Leadership*

Path	Estimate ( <i>SE</i> )	Std. Estimate	<i>z</i>
GTL→GTL1	1.000	.725	
GTL→GTL2	.989 (.062)	.741	16.044***
GTL→GTL3	1.023 (.062)	.764	16.541***

GTL→GTL4	1.107 (.066)	.780	16.893***
GTL→GTL5	.965 (.064)	.700	15.139***
GTL→GTL6	1.067 (.064)	.766	16.603***
GTL→GTL7	1.135 (.064)	.823	17.829***

*Note.* \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ ;  $\chi^2 (14) = 56.876$ ,  $p < .001$ , Normed  $\chi^2 = 4.063$ , TLI = .954, CFI = .977, RMSEA [.057, .099] = .077,  $p < .05$ .

Next, Table 30 presents the results of the CFA conducted on subscale Brief Resilience Scale. Statistical significance was found with respect to all paths, and all except the path with the third item were found to achieve statistical significance at the .001 alpha level. However, standardized estimates were found to be low in several cases, with the standardized estimates associated with items one, three, and five all found to be below .300. Finally, model fit was found to be poor. Overall, these results indicate the lack of good model fit, and that this factor structure was not ideal.

**Table 30**

*Confirmatory Factor Analysis: Brief Resilience Scale*

Path	Estimate (SE)	Std. Estimate	<i>z</i>
BR→BR1	1.000	.215	
BR→BR2	3.829 (.851)	.768	4.497***
BR→BR3	.693 (.264)	.152	2.622**
BR→BR4	3.977 (.884)	.773	4.499***
BR→BR5	1.334 (.365)	.280	3.651***
BR→BR6	4.439 (.982)	.867	4.522***

*Note.* \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ ;  $\chi^2 (9) = 347.286$ ,  $p < .001$ , Normed  $\chi^2 = 38.587$ , TLI = .229, CFI = .669, RMSEA [.247, .296] = .271,  $p < .001$ .

The results of the CFA conducted on subscale ENTRELEAD are presented in Table 31. The results of this analysis found all paths to achieve statistical significance at the .001 alpha level, with all standardized estimates found to be above .600. Regarding model fit, normed chi-

square was below three, with both the TLI and CFI found to be above .950. The RMSEA was found to be .061, with the 90% confidence interval ranging from .043 to .080, with the RMSEA not found to achieve statistical significance. The results of this analysis indicated excellent model fit as well as a very appropriate factor structure.

**Table 31**

*Confirmatory Factor Analysis: ENTRELEAD*

Path	Estimate ( <i>SE</i> )	Std. Estimate	<i>z</i>
E→E1	1.000	.695	
E→E2	.923 (.064)	.704	14.529***
E→E3	.924 (.070)	.632	13.136***
E→E4	1.019 (.066)	.755	15.509***
E→E5	.956 (.065)	.714	14.722***
E→E6	1.013 (.065)	.762	15.642***
E→E7	1.013 (.067)	.735	15.137***
E→E8	1.137 (.070)	.789	16.135***

*Note.* \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ ;  $\chi^2(20) = 58.286$ ,  $p < .001$ , Normed  $\chi^2 = 2.914$ , TLI = .963, CFI = .980, RMSEA [.043, .080] = .061,  $p = .143$ .

**Difference in Means Tests and Correlations on Sample 2**

Initially, a series of independent-samples *t*-tests were conducted with respondent gender in order to determine whether there were any significant mean differences in these subscales on the basis of gender. Significant mean differences were found in most cases, and in all cases where significance was found, a significantly higher mean was found for males as compared with females. Table 32 reports the descriptive statistics associated with these analyses. With regard to the results of these statistical tests, significance was indicated with respect to F1,  $F = 4.020$ ,  $p < .05$ ,  $t(426.999) = 2.383$ ,  $p < .05$ , F2,  $F = 7.603$ ,  $p < .01$ ,  $t(433.259) = 2.828$ ,  $p < .01$ ,



F4,  $F = 3.809, p = .052, t(494) = 2.268, p < .05$ , F5,  $F = 6.025, p < .05, t(432.730) = 3.020, p < .01$ , and F7,  $F = 4.990, p < .05, t(427.436) = 2.068, p < .05$ . Significance was not found in the cases of F3,  $F = 7.437, p < .01, t(441.393) = 1.924, p = .055$ , or F6,  $F = .430, p = .512, t(494) = .414, p = .679$ .

**Table 32**

*Means and Standard Deviations of Subscales by Gender*

Subscale	Gender	Mean	Std. Deviation
Adaptive	Male	0.057	0.997
	Female	-0.151	0.914
Directive	Male	0.073	0.997
	Female	-0.171	0.895
Relational	Male	0.038	1.009
	Female	-0.128	0.880
Intrinsic	Male	0.046	0.981
	Female	-0.155	0.921
GTL	Male	0.087	1.010
	Female	-0.178	0.908
BRS	Male	-0.023	1.005
	Female	0.015	0.970
E	Male	0.057	1.009
	Female	-0.126	0.923

GTL = Global Transformational Leadership, BRS = Brief Resilience Scale, E = ENTRELEAD

A series of one-way ANOVAs were then conducted in order to determine whether there were significant mean differences in these subscales on the basis of generational status (See

Appendix H). Significant mean differences were found in the cases of F2,  $F(4, 505) = 3.879, p < .01$ , F4,  $F(4, 502) = 2.722, p < .05$ , F5,  $F(4, 500) = 2.506, p < .05$ , and F6,  $F(4, 499) = 9.906, p < .001$ . Significance was not found with regard to F1,  $F(4, 506) = 1.165, p = .325$ , F3,  $F(4, 502) = .743, p = .563$ , and F7,  $F(4, 498) = .927, p = .448$ . Alongside these tests, tests for the homogeneity of variance were also conducted in order to help determine which post-hoc comparison would be appropriate in relation to each ANOVA. Focusing specifically on the ANOVAs which were found to achieve statistical significance, the assumption of the homogeneity of variance was found to be violated in all four cases: F2,  $F(4, 505) = 5.077, p < .01$ , F4,  $F(4, 502) = 4.990, p < .001$ , F5,  $F(4, 500) = 4.478, p < .01$ , and F6,  $F(4, 499) = 3.782, p < .01$ .

With regard to the post-hoc comparisons, the Games-Howell test was used in all cases as this test does not incorporate the assumption of the equality of variances, with this assumption found to have been violated in all four cases. Regarding F2, these tests found those born between 1946 and 1964 to have a significantly lower mean than all other categories of response. With respect to F4, those born between 1946 and 1964 were found to have a significantly lower mean than those who provided no response, and those who were born between 1981 and 1994. Next, regarding F5, these results found that those born between 1946 and 1964 had a significantly lower mean than those who provided no response, as well as those born between 1981 and 1994, and those born after 1995. Considering F6, it was found that those born between 1946 and 1964 had a significantly higher mean than those born after 1995, with those born between 1964 and 1981 having a significantly higher mean than those who provided no response, those born between 1981 and 1994, and those born after 1995. Finally, those born

between 1981 and 1994 were found to have a significantly higher mean than those born after 1995.

A second series of ANOVAs were conducted with ethnicity (See Appendix I). These analyses found statistical significance with respect to F2,  $F(5, 490) = 2.612, p < .05$ , F4,  $F(5, 490) = 2.709, p < .05$ , F5,  $F(5, 490) = 3.822, p < .01$ , and F6,  $F(5, 490) = 8.777, p < .001$ . In addition, significance was not indicated with respect to F1,  $F(5, 490) = 1.492, p = .191$ , F3,  $F(5, 490) = 1.575, p = .166$ , or F7,  $F(5, 490) = 2.094, p = .065$ . With regard to the four cases in which significance was found, Levene's test of the homogeneity of variances was only found to achieve statistical significance in the case of F6,  $F(5, 490) = 2.994, p < .05$ . Significance was not found with respect to F2,  $F(5, 490) = .159, p = .977$ , F4,  $F(5, 490) = .068, p = .997$ , or F5,  $F(5, 490) = .306, p = .910$ . Based on these findings, the Games-Howell test, which does not assume the equality of variances, was used in the case of F6, with Tukey's HSD, which does, and has greater power, used in the three remaining cases. With respect to F2, F4, and F5, Asians were found to have a significantly higher mean than whites. In the case of F6, whites were found to have a significantly higher mean as compared with those from the Indian subcontinent, Asians, and American Indians/Alaskan Natives.

The final set of analyses consisted of a set of correlations conducted between this study's subscales with these correlations conducted separately on the basis of these same demographic measures. First, with respect to gender, differences in the correlations between males and females were calculated in order to determine whether any of these correlations were particularly notable for the differences in their strengths between males and females. The mean of these mean differences was found to be equal to .115, which is relatively small. The largest difference in these correlations between males and females was in relation to the correlation between F1

and F6, which was found to be .623 with respect to males, and .330 with respect to females ( $p < .001$  in both cases).

Next, with respect to generational status and ethnicity, the absolute values of the differences between each pairwise comparison were calculated, with the mean then taken of these differences, in order to calculate the overall mean difference in the correlations between each category of response, with missing data excluded from these analyses. With regard to generational status, the mean of these mean differences was found to be .206, which was fairly substantial. The largest mean difference was associated with the correlation between F2 and F6, with these correlations found to have a mean difference of .441. This correlation was found to be .590 with respect to those who provided no response ( $p < .001$ ), -.260 among those born between 1946 and 1964 ( $p = .282$ ), .560 among those born between 1965 and 1980 ( $p < .001$ ), .478 among those born between 1981 and 1994 ( $p < .001$ ), and .786 among those born after 1995 ( $p < .001$ ).

The final set of correlations focused upon ethnicity. The same method was used here as was used with generational status, with the mean of mean differences in the correlations found to be .167, which was lower but still substantial. Here, the correlations exhibiting the largest differences was again found to be between F2 and F6, with these correlations found to have a mean difference of .424. Examining the correlations on the basis of ethnicity, this correlation was found to be .209 among whites ( $p < .01$ ), .812 among those from the Indian subcontinent ( $p < .001$ ), .068 among those from Central or South America ( $p = .763$ ), .490 among African American/blacks ( $p < .05$ ), .674 among Asians ( $p < .001$ ), and .897 among American Indians and Alaskan Natives ( $p < .001$ ).

### **Summary**

This chapter has chronicled the analyses undertaken toward the development of a Liminal Leadership Scale. Sample 1 was used for Exploratory Factor Analysis. Confirmatory Factor Analysis was completed on Sample 2. Additionally, t-tests and one-way ANOVAs were carried out on Sample 2. The meaning of these analyses will be discussed in the next chapter.

# CHAPTER FIVE

## Discussion

A brief summary of the research is highlighted and discussed. The research findings in the study from collected data is discussed. A Liminal Leadership Scale is presented for further study. The implication for research, HRD professional, and limitations of the study are presented, followed by the recommendation and direction for future studies.

This chapter summarizes the purpose and key findings of this research. It also will provide recommendations for future research of the Liminal Leadership Scale (LLS). This research was conducted to operationalize and measure the construct of liminal leadership. A liminal leader is an individual who leads through initial or transitional spaces caused by diversity in the workplace, organizational structure, external factors such as time zones or labor laws, or a combination of these factors. Specifically, this research was conducted to look at the intrinsic and extrinsic processes of a person who leads in liminality. The aim of this study was to determine how liminal leaders lead. Subsequent questions were also included: How do liminal leaders think about leading? And What motivates liminal leaders to lead betwixt and between?

After a thorough review of the literature, it was obvious that no current instrument existed that would measure this construct. The changing global market needs liminal leaders and the demand will only grow with increasing globalization. A Conceptual Model of Liminal Leadership (Shaw-VanBuskirk, Lim, & Jeong, 2019) was developed and, from that model, a Liminal Leadership Scale (LLS) was constructed and validated.

## Brief Summary

The primary focus of this research was the development of a Liminal Leadership Scale. Previous chapters have outlined the theoretical underpinnings of the development of a Liminal Leadership Model, the methodological process for development of a Liminal Leadership Scale, and the findings from the research that was undertaken in pursuit of that aim. This summary will offer only the highlights of the previous chapters.

An integrative literature review was completed and the similarities and contrasts to relevant leadership theories was made. As a result, a conceptual framework for liminal leadership was developed consisting of four dimensions and 27 characteristics. This framework was then sent to a panel of six leadership experts. After their feedback was received, final adjustments were made to the conceptual framework and the Liminal Leadership Model was solidified (Shaw-VanBuskirk, Lim, & Jeong, 2019).

Once the Conceptual Model of Liminal Leadership was formalized efforts began to develop a Liminal Leadership Scale. A survey was developed utilizing items constructed from the Liminal Leadership Model (Shaw-VanBuskirk, Lim, & Jeong, 2019). The items were sent to a panel of four leadership experts for feedback and refinement. The final survey consisted of 43 items. Additionally, three scales were added for validation purposes; The Brief Resilience Scale, The Global Transformation Scale, and the ENTRELEAD Scale. The distributed survey had a total of sixty-four items excluding demographics. The survey items were presented on a five-point Likert-type scale with 1 being, strongly disagree to 5 being, strongly agree. Three items on the Brief Resilience Scale were reverse coded. The survey was distributed through email solicitation, social media platforms, and mTurk.

Two samples were drawn, the first consisting of 333 usable responses and the second sample consisted of 512 usable responses. Descriptive statistics were completed for both

samples. Sample 1 was used to conduct Exploratory Factor Analysis and Sample was used for Confirmatory Factor Analysis. Additionally, Sample 2 was used to run correlation analysis to determine if significant differences between the groups could be seen.

The findings were unexpected. However, they are significant to the advancement of developing a Liminal Leadership Scale. Additionally, the impact of a true random global sample on similar research must be explored. As a result of the challenges presented by the populations gained in the samples drawn, a different approach was taken to the data analysis. A scale was developed using the methodology previously outlined. The initial factor analysis on the entire instrument demonstrated a diffusion of loadings. The decision was made to proceed with analysis of each subscale based on the strength of the multi-phase process that had employed in the development of the scale. The expertise of leadership scholars at two points in the process reflects Carpenter's (2018) belief, "The durability of measure would likely withstand statistical and methodological challenges if scholars relied on multiple methods to build them" (p. 32). It was on this foundation that analysis proceeded. Following the exploratory and confirmatory stages of factor analysis, correlation analysis was used to determine the convergence and divergence of answers by generational and cultural affiliation and educational background.

### **Findings**

Exploratory Factor Analysis (EFA) was carried out with sample one on each of the subscales. Each of the subscales loaded onto a single factor. All of the subscales loaded positive and strong. No indication was present that any items should be reduced. Therefore, the subscales were advanced for validation with Confirmatory Factor Analysis on sample 2.

Confirmatory Factor Analysis on sample 2 on each of the subscales as undertaken in EFA. The results strongly suggest reasonable to excellent model fit and factor structure for all



subscales with the exception of the Brief Resilience Scale. The model fit on the BRS was found to be poor and lacked good model fit indicating that this factor structure was not ideal. This subscale had been constrained to one factor during Exploratory Factor Analysis based on the reported findings by the authors (Smith et. al., 2008). Based on these findings the Liminal Leadership Scale retained all 43 items.

Due to the initial diffusion of loadings on the entire instrument, a series of analyses was carried out to determine if there were significant mean difference on the subscales in regard to gender. Significant mean differences were found on five of the subscales; Adaptive, Directive, Intrinsic, Global Transformational Leadership, and ENTRELEAD. While significant, the findings were a slight significance and, in all cases, where significance was noted a significantly higher mean was found for men. The two subscales, Relational and Brief Resilience Scale, did not demonstrate significant mean differences.

From there, a series of ANOVAs was conducted to determine if there were significant mean differences on the basis of generational status. Significant mean differences were found on the four subscales; Directive, Intrinsic, Global Transformational Leadership, and Brief Resilience Scale. Significant mean differences were not found for the subscales; Adaptive, Relational, and ENTRELEAD. Tests for the homogeneity of variance were carried out in order to determine which post-hoc comparison would be appropriate. The appropriate post-hoc tests were then conducted. On the Directive subscale it was found that those born between 1946 and 1964 had a significantly lower mean than the other respondents. This same group also had significantly lower scores on the Intrinsic scale than those who failed to respond to the question or were born between 1981 and 1994. The findings in regard to the Global Transformational Leadership scale demonstrate significantly lower means for those born between 1946 and 1964

than those who failed to respond, those born between 1981 and 1994, and those born after 1995. On the Brief Resilience Scale, it was found that those born between 1964 and 1981 had a significantly higher means than those who failed to respond, those born between 1981 and 1994 and those born after 1995. It was also discovered that those born between 1981 and 1994 had a significantly higher mean than those born after 1995.

The next set of ANOVAS were conducted on the basis of ethnicity. Significant mean differences were found on subscales; Directive, Intrinsic, Global Transformational Leadership, and Brief Resilience Scale. Significant mean differences were not found for the subscales; Adaptive, Relational, and ENTRELEAD. Tests for the homogeneity of variance were carried out in order to determine which post-hoc comparison would be appropriate. The appropriate post-hoc tests were then conducted. On the Directive, Intrinsic, and Global Transformational Leadership subscales it was found that Asians were found to have significantly higher means than whites. On the Brief Resilience Scale, it was found that whites had a significantly higher mean than those from the Indian subcontinent, Asians, and American Indians/Alaskan Natives.

The final set of analyses was a set of correlations conducted between this study's subscales. Each was conducted separately based on the same demographic measures. In respect to gender, the mean of these mean differences was found to be relatively small with the largest difference in correlations to be between the Adaptive and Brief Resilience Scale subscales. The generational status correlations found a fairly substantial mean of means difference with the largest difference between the directive and Brief Resilience Scale subscales. The set of correlations conducted on culture/ethnicity found a lower difference than the generational but still substantial difference with the largest differences again found between the Directive and Brief Resilience Scale subscales.

The end result was the development of a Liminal Leadership Scale consisting of four subscales. The Liminal Leadership Scale was validated by Confirmatory Factor Analysis.

Significant differences in culture/ethnicity and generational affiliation were found.

### **Generational Characteristics**

The challenges in the modern workplace from the differences in individual preferences in association with generational affiliation was evident in this study. Those who chose to respond were predominantly from the Millennial generation born between 1981 and 1994. Literature tells us they are digital natives and this response rate could be attributed to their ease with technology and the use of an online survey and mTurk as a distribution channel. Generational status also impacted the findings of four of the subscales.

On the Directive subscale it was found that Boomers had a significantly lower mean than the other respondents. This is a somewhat surprising findings in that we often associate Boomers with terms such as ‘controlling’ (Phin, 2012). This same group also had significantly lower scores on the Intrinsic scale than those who failed to respond to the question or were born between 1981 and 1994. Boomers who are known to ‘live to work’ (Gursoy, Maier, & Chi, 2008), may sacrifice internal processes for more active physical pursuits. The findings in regard to the Global Transformational Leadership scale demonstrate significantly lower means for those born between 1946 and 1964 than those who failed to respond, those born between 1981 and 1994, and those born after 1995. Millennials are more ethnically diverse (Spiro, 2006) and have lived in a world with cheap travel options have enabled them to travel the world (Bennet et al., 2012). This would afford them a more global perspective. Gen Z has a high regard for racial equality (Hope, 2016) that would afford them a more expansive view of the world in which we live. On the Brief Resilience Scale it was found that Boomers scored better than Millennials and

Gen Z. Millennials, known for slower entrance to long-term relationships (Spiro, 2006), described as nurtured (Bennet et al., 2012) or coddled (Phin, 2012), may also take longer to develop the resiliency displayed by the Boomers. They do score slightly higher than Gen Z. Gen Z, having always lived in a world with danger, terror, and cyberbullying (Hope, 2016), also have limited experience with resilience. An alternative explanation would suggest resilience is developed with age.

### **Culture Matters**

The inherent bias in research that focuses on a single culture, ethnicity, or group impacts the outcome of the research. In the increasingly global world where research will be conducted, the need for better understanding of this phenomenon is crucial. The development of psychometric instruments, and all research that seeks a global impact, must be approached differently than in the past. The manner in which questions are asked in a survey, the cultural assumptions of behavioral norms, and even simple understanding of word meaning vary significantly from culture to culture.

The foundation of the belief that a Liminal Leadership Scale could be developed utilizing a random global sample was World Polity Theory. Yang and Taylor (2014) suggest three factors that impact willingness to collaborate across international boundaries; economic divide, cultural blocks, and different political systems.

Culture, defined as, “a pattern of shared basic assumptions that a group learned as it solved its problems of external adaptation and 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 relations to those problems,” (Schein, 1992, p. 12) plays an important part in influencing the structure in which people are willing to operate (Yang & Taylor, 2014, p. 512).

The differences in political systems does offer insight into the findings of this study. It is noted that established democratic political systems encourages diverse opinions and vibrant civil participation results in greater willingness to engage in organizations. Conversely, authoritarianism or semi-authoritarianism seek to regulate civil or civic associations which discourages participation in group life (Yang & Taylor, 2014). The two dominant populations of the samples drawn were from the United States/North America and the Indian sub-continent.

This study was impacted by the divergent cultural norms of the two largest populations represented; the Indian sub-continent and the United States. An important factor between the two is poverty rates, class systems, and communicational norms. Hofstede and Mynock's research indicates a wide expanse between the two populations that is, at times, irreconcilable (Mynock & Hofstede, 2012). On a continuum concerning low versus high context in communication norms, the two lie at opposite ends of the spectrum (Myers, 2014). The data analysis undertaken here is an example of polarized viewpoints between the cultures.

The overwhelming finding of this research is that culture matters a great deal when undertaking this type of research. Further research will be needed to refine the scale further and adapt it to a true global population. This will require multiple iterations of testing survey question bias across cultural groups.

### **Methodological Implications**

This research sought to draw a random global sample. The descriptive statistics indicate that this did occur in both Samples drawn. This type of sample is unprecedented in scope. A review of data bases using keywords random, global, sample, and population, did not return any results that were as expansive in scope. Many of the cross-cultural studies undertaken were limited to a representation of many countries but within a single organization. This study did not

have any boundaries except that the individual had to identify as leading in one of the liminal circumstances offered at the beginning of the survey. The implications for this study and other similar studies is profound. If quantitative studies are undertaken using single populations and are then validated using similar populations, then it must be understood that the findings do not necessarily transfer to other cultures. It is also true that findings within an organization, even when from multiple countries, will not necessarily generalize to other organizations. The use of validation instruments must also be considered for the populations sampled and how those populations compare to the expected sample to be drawn in the research in which it is used. Hofstede's associate questions if such findings can be achieved (Hofstede, 2001).

There were other methodological findings that are significant as well. There is considerable attention given to survey fatigue and many surveys are shortened to decrease the risk of this from occurring. However, the Brief Resiliency Scale that was used as a validation instrument in this research demonstrated that respondents were still very engaged when they encountered it in the survey. The Brief Resiliency Scale has reverse codings for questions number two, four, and six. Respondents overwhelming were consistent in their answers indicating they were engaged and recognized the questions they were being asked. Analysis undertaken on this scale showed similar results to the original findings.

### **Researcher Bias**

As Mynock (2011) predicated, and as Westerner research is often faulted, the significance of the cultural norms outside of the United States was underestimated when the survey was designed. It should be noted that, while a random global sample was the desired outcome, the large population from the Indian sub-continent was not anticipated. The impact on the research was profound and should be noted for future reference. Future study should

incorporate qualitative interviews from liminal leaders in a large representation of nations from around the globe; looking for similarities and differences that can be formulated into a single point of view when these leaders are faced with leading in a liminal situation. The other alternative is to embrace Mynock's notion that in some cases, common ground cannot be found due to cultural differences the West is averse to discuss, much less embrace (2011).

Our globalized world requires that individuals who lead in liminal situations advance the goals of the organization. However, the research undertaken in this study suggests that the work of Hofstede and Mynock (2012) may be even more relevant than when it was first completed. The Western view that diversity is to be embraced is not shared around the globe. While it is expected in the United States, many countries do not embrace nor accept other ways of thinking of modes of behavior outside of their own cultural norms. Western researchers must face the possibility that our methods of research cannot be applied to all populations around the world.

These findings require a self-reflected examination of all research methods that are distinctly Western or even, distinctly American, for their use in other populations. A change in research methodology for populations to be included may be necessary to gain the understanding of the phenomenon of Liminal Leadership. The method for developing a scale will need to be revised and reformulated to gain the information needed to predict the success of individuals who lead in liminal circumstances. It is also worth considering if generational differences matter in other countries and cultures as much as is believed they impact the work force in the United States. The degree of impact is also a point for future consideration.

## **MTurk**

Recent trends have shown the mTurk population shifts have increased the international respondents and a disproportionate number of highly educated Indian workers (Smith, Roster,

Golden, & Albaum, 2016). Hunt and Scheetz (2019) offered practical types to narrow the population sample. However, their recommendations were published after this research was formalized. Future studies could incorporate their recommendations to examine particular cultural groups in order to better understand the role of culture on the findings.

### **Limitations of the Study**

There are several limitations to the study. The Liminal Leadership Scale (LLS), consisting of four subscales was constrained by the vast differences in culture between the two dominant groups of respondents; Caucasian and Sub-Indian Continent. As indicated in the literature, the divergence on multiple cultural dimensions could not be more extreme. This caused obvious difficulty in the data analysis and limits the generalizability of the findings to other populations.

A second limitation would be the self-reporting aspect of the survey itself. The closed response format of this survey did not allow for expression of individual thoughts or opinions nor did it allow for the expression of the respondents to particular questions. An open response option might have offered insight into how the questions were read, understood, and applied from the multiple cultures seen among the participants.

Another limitation would be the use of mTurk and the difficulties noted by other researchers after this study had commenced. The increase in respondents from the sub-Indian continent has been noted and was certainly visible in the samples collected for analysis in the development of the Liminal Leadership Scale. This causes further difficulty in that exact populations cannot be reproduced for duplication of the research.

A final limitation would be the expansive scope of the research. The findings of the scale are not industry specific and, as such, would benefit from multiple studies within all sectors of



the economy to determine where liminal leadership best fits. A Liminal Leadership Scale is an important endeavor and should be advanced with further research that speaks to specific situations of liminality but also to the individuals who thrive in the betwixt and betweenness of any leadership role.

### **Implications for HRD Research, Theory, and Practice**

The impact of this research goes far beyond HRD Research. The implications for continued research are many. First, a scale was developed, but additional validation studies are needed to better refine the global generalizability of the instrument. Second, the methodological findings of a true, random global sample have significant impact on all research findings that have used a western population for the sample. The findings impact any psychometric instruments or research undertaken by Western researchers and the generalizability of those findings to a globalized society. Third, cultural distinctions matter in scale development processes. Finally, the findings of sustained focus of the population discounts what many see as survey fatigue.

### **Recommendations and Directions for Future Research**

The need for a Liminal Leadership Scale is great due to a growing trend toward globalization, changing labor markets, and a diverse workforce. The scale that has been developed could be further refined in several ways. First, more qualitative work would benefit the understanding of liminal leaders. Literature conveys a great deal of information but first-hand knowledge of those who lead in liminality would strengthen the foundational underpinnings of the Liminal Leadership Model. Ethnographic research, case studies, and interviews with liminal leaders from around the globe would reinforce the knowledge we have already gained through academic fields. A multi-national scope of interviewees would offer a more diverse perspective

than is currently available. The integrative literature review undertaken at the beginning of this research revealed the limited knowledge that currently exists.

The Liminal Leadership Scale would also benefit from validation studies using various populations. It would also be beneficial to replicate the single company with multiple country outlet models employed by Hofstede in his groundbreaking work on cultural dimensions. While the aim of a Liminal Leadership Scale is to discern the strengths of individuals who lead in ambiguous situations, it would be prudent to also have the comparison of single company samples for comparison and validation. Overall, a robust field of validation studies would benefit the strength of the Liminal Leadership Scale (Carpenter, 2018).

Another consideration would allow analysis of the data to be analyzed in multiple avenues beyond the decisions made for this study. The data could be separated by culture/ethnicity and compared to the findings of the analysis run on the sample with all groups combined. Industry sector could be completed similarly by separating the responses from different cultures. These different approaches to data analysis would allow for comparison to the findings presented here.

Finally, the global pandemic of COVID-19 which rages as this study is completed, allows for first-hand observation of how leaders respond to ambiguous and constantly transforming situations based on a volatile health crisis that has crippled the global community in ways not previously seen. While it is important to note the pain of loss the pandemic is having throughout the world, it is also an opportunity to see the crisis through a researchers lens and investigate the characteristics of leaders who lead through the liminality brought on by the pandemic.

### **Summary and Conclusion**

This research set out to develop a Liminal Leadership Model and, from that, a Liminal Leadership Scale that would allow potential liminal leaders to be evaluated for the attributes they possess and those that would require training. The research questions posed were: How do liminal leaders lead? How do liminal leaders think about leading? and What motivates liminal leaders to lead betwixt and between? The Liminal Leadership Scale reflects that a liminal leader would possess adaptive, directive, and relational characteristics in response to the first question. The characteristics of the Intrinsic Scale would answer the next two research questions.

While this research has noted limitations, it has moved the Liminal Leadership paradigm forward exponentially. Further research will be necessary to refine the scale for greater generalizability. Our world is rapidly becoming a global community. The Liminal Leadership Scale advances the needed leadership for this new community.

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## Appendix A



**Institutional Review Board for the Protection of Human Subjects**  
**Approval of Initial Submission – Exempt from IRB Review – AP01**

**Date:** March 14, 2019

**IRB#:** 10527

**Principal Investigator:** Leslie A. Shaw-Van Buskirk

**Approval Date:** 03/14/2019

**Exempt Category:** 2

**Study Title:** Leading Betwixt and Between: The Development of a Liminal Leadership Scale

On behalf of the Institutional Review Board (IRB), I have reviewed the above-referenced research study and determined that it meets the criteria for exemption from IRB review. To view the documents approved for this submission, open this study from the *My Studies* option, go to *Submission History*, go to *Completed Submissions* tab and then click the *Details* icon.

As principal investigator of this research study, you are responsible to:

- Conduct the research study in a manner consistent with the requirements of the IRB and federal regulations 45 CFR 46.
- Request approval from the IRB prior to implementing any/all modifications as changes could affect the exempt status determination.
- Maintain accurate and complete study records for evaluation by the HRPP Quality Improvement Program and, if applicable, inspection by regulatory agencies and/or the study sponsor.
- Notify the IRB at the completion of the project.

If you have questions about this notification or using iRIS, contact the IRB @ 405-325-8110 or [irb@ou.edu](mailto:irb@ou.edu).

Cordially,

A handwritten signature in black ink that reads 'Aimee Franklin'.

Aimee Franklin, Ph.D.  
Chair, Institutional Review Board

## Appendix B

Expert Panel Letter

Dear Colleague,

I am asking for your expert assistance in the pursuit of important leadership research I am conducting for my dissertation. I'll offer a brief outline of the project. Then give an overview of the assistance I need from you. Instructions on completing the form will follow. Thank you for investing your time in this project.

The research project is the development of a scale of Liminal Leadership. Liminal Leadership is a new leadership paradigm resulting from changing organizational norms, generational preferences, and globalization. Liminal is a Latin word meaning betwixt or between. Leaders in this state work have the potential to lead in a context where they operate between generations, cultures, ethnicities, languages, labor laws, communication differences, and time zones. Research indicates the incident of liminality will rapid increase due to the factors listed above. In order to have well-trained leaders ready to fill the expanding need for Liminal Leaders, a scale has been developed to determine the readiness of individuals to fill that role. It will also provide HRD to identify areas where training and development are needed.

The assistance I require from you is to offer your expertise in solidifying dimensions, characteristics, and corresponding survey questions for a Scale of Liminal Leadership. An integrated literature review was conducted and a conceptual framework was established under the guidance of my Dissertation Faculty Chair, Doo Hun Lim, PhD., a highly respected scholar in the areas of leadership and Human Resource Development. This conceptual framework provided the basis for survey questions to be developed. Your expertise will provide valuable feedback into the strength of this instrument.

I have attached the form I would ask you to complete. The form is arranged with the Dimensions in the left column and the individual characteristics within the Dimensions to the immediate right. You will find a column after each characteristic with the letters 'A' and 'D' which stand for Agree or Disagree. You will need to indicate whether you agree or disagree with the characteristics inclusion within that dimension. Next, you will find space where you may indicate if you believe it should be moved to another Dimension, revised, or deleted altogether. Moving to the right on the document, you will find the corresponding survey questions for each characteristic. Again, you are asked to agree or disagree in the column marked, A/D. Finally, space is provided for you to offer input on the survey item.

Thank you for your expert assistance with this important research. I know your time is valuable and I appreciate your investment in this project. I have provided my contact information and Dr. Lim's below in case you have questions as you proceed.

## Appendix C

Expert Panel Consent

Consent to Participate in Research at the University of Oklahoma

[OU-NC IRB Number: xxx Approval Date: xxx]

You are invited to participate in research about Liminal Leadership.

If you agree to participate, you will provide your expert opinion on the title attached below.

There are no risks, benefits, or compensation.

Your participation is voluntary and your responses will be: After removing all identifiers, we might share your data with other researchers or use it in future research without obtaining additional consent from you.

Even if you choose to participate now, you may stop participating at any time and for any reason.

If you have questions about this research, please contact:

Leslie Shaw VanBuskirk, MPA – Principal Investigator

405-201-6816 [lesliev@ou.edu](mailto:lesliev@ou.edu)

or

Doo Hun Lim, PhD. – Faculty Advisor

405-325-7941 [dhlim@ou.edu](mailto:dhlim@ou.edu)

You can also contact the University of Oklahoma – Norman Campus Institutional Review Board at 405-325-8110 or [irb@ou.edu](mailto:irb@ou.edu) with questions, concerns or complaints about your rights as a research participant, or if you don't want to talk to the researcher.

Please print this document for your records. By providing information to the researcher, I am agreeing to participate in this research.

## Proposed Conceptual Model of Liminal Leadership with Survey Items

Dimension	Characteristic	A / D	Move	Survey Item	Survey Item Source	A / D	Move
Adaptive	Adapt to the followers, groups, context and situation (Northouse, 2007).			I adapt to my followers.	Literature Review		
				I adapt to the situation in which I find myself.	Literature Review		
				I adapt to group behavioral norms.	Literature Review		
				I expect others to adapt to me. (R)	Literature Review		
	Customized communication by generation, culture, and geographical proximity (Schmidt, 2014).			How I communicate with others depends on age.	Literature Review		
				How I communicate with others depends on their culture.	Literature Review		
				I am aware of time differences when choosing communication methods.	Literature Review		
				I communicate with everyone in the same manner.	Literature Review		
				How I communicate (Face to face, email, text, video conferencing) with others is determined by their proximity to me.	Literature Review		



			How I communicate with others is determined by their communication preferences.	Literature Review		
			I always use the same communication method. (R)	Literature Review		
Maintain the status quo in an unstable or rapidly changing situation (Richardson, 2002).			I tend to return to standard operating procedures quickly after a change in the work situation.	Smith, et al, 2008		
			I need time to adjust to a changing environment. (R)	Smith, et al, 2008		
Rapidly bounce back and overcome turbulent conditions (Denhardt & Denhardt, 2010).			I recover quickly from turbulence in the workplace.	Smith, et al, 2008		
			It is hard for me to recover from turbulence in the workplace. (R)	Smith, et al, 2008		
Understand current situation and develop customized responses that reflect that understanding			I read the situation quickly.	Literature Review		
			I adapt my responses to the situation presented.	Literature Review		
			I do things the same way all the time. (R)	Literature Review		

	(Lengnick-Hall & Beck, 2005).						
	Predict changes to create new opportunities (Lengnick-Hall et al., 2011).			I anticipate change.	Literature Review		
				I see change as a new opportunity.	Literature Review		
				I embrace change.	Literature Review		
	Develop a repertoire of routines to respond to unexpected changes (Lengnick-Hall & Beck, 2005).			I have developed routines in case change occurs.	Literature Review		
Directive	Cast a vision of the organizational goals for their followers (Bolman & Deal, 2008).			I have a plan to obtain the goal.	Literature Review		
				I communicate my plans to my followers.	Literature Review		
				I outline each step in the goal.	Literature Review		
			I explain my need for requests made.	Literature Review			

Information sharing and sense-making to aid the followers (Weick & Sutcliffe, 2011).			I require my followers to do what is asked without question. (R)	Literature Review		
			I share information with my followers.	Literature Review		
			I give only necessary information to my followers. (R)	Literature Review		
			I assist my followers in making sense of what is known.	Literature Review		
			I allow my followers to come to their own conclusions. (R)	Literature Review		
Establish a standard of behavior and communication for their followers and groups (Zigurs, 2003).			I set a standard of behavior for my followers.	Literature Review		
			I allow my followers to behave in a manner that works for them. (R)	Literature Review		
Facilitate communication exchanges between group members (Pontefract, 2014).			I set communication patterns for my followers.	Literature Review		
			I allow my followers to communicate according to their preferences. (R)	Literature Review		
			I encourage followers to communicate with each other professionally.	Literature Review		

				I encourage followers to communicate with each other personally.	Literature Review		
	Engage in transactional exchanges when necessary (Northouse, 2007).			I direct followers' actions when necessary.	Literature Review		
Relational	Build personal relationships (Cogliser & Schriesheim, 2000).			I know who my followers are as individuals.	Literature Review		
				I develop a personal relationship with my followers.	Literature Review		
	Frequently communicate from a professional and personal perspective (Schmidt, 2014).			I communicate with my followers frequently.	Literature Review		
				I communicate with my followers personally.	Literature Review		
				I avoid communicating on a personal level. (R)	Literature Review		
				I communicate with my followers as professionals.	Literature Review		
				I communicate with my followers as their superior. (R)	Literature Review		
			I communicate with my followers as people.	Literature Review			

Provide motivation and inspiration to encourage goal attainment (House, 1996).			I look for ways to motivate my followers.	Literature Review			
			I expect followers to be self-motivated. (R)	Literature Review			
			I try to inspire my followers to achieve the goal.	Literature Review			
Focus on improving their follower's performance and personal development (Conger, 1999).			I frequently talk with followers about their performance.	Literature Review			
			I develop a plan with my followers for performance improvement.	Literature Review			
			I acknowledge my followers achievements frequently.	Literature Review			
			I develop a plan with my followers to achieve their personal development goals.	Literature Review			
			I do not interfere with personal development of my followers. (R)	Literature Review			
Openly express authentic emotions appropriate to the context			I express appropriate emotion around my followers.	Literature Review			
			I acknowledge my followers emotions.	Literature Review			

	(Avolio et al., 2009).							
Intrinsic leadership	Comfortable with ambiguity (Mathews, 2016).			I enjoy solving ambiguous problems.	McClain, 1993			
				I consider multiple solutions to a problem.	McClain, 1993			
				I can easily choose an action when the outcome is uncertain.	McClain, 1993			
				I prefer to wait until a solution with a clear outcome is available. (R)	McClain, 1993			
	Intrinsically motivated (Trépanier, Fernet, & Austin, 2012).			I motivate myself.	Literature Review			
	Self-reflexivity, self-regulation, and self-aware (Avolio et al., 2009).				I am aware of my bias toward others.	Literature Review		
					I am aware of the emotion I am feeling.	Literature Review		
					I regulate my emotions.	Literature Review		
					I am aware of my thoughts.	Literature Review		
					I control my thinking.	Literature Review		
	Cultural intelligence				I am aware that other cultures have different ways of doing things.	Literature Review		

	(Levy et al., 2007).		I adapt my interaction to the cultural norms of my followers.	Literature Review		
			I treat everyone the same. (R)	Literature Review		
			I would like to live in another country for a while.	Literature Review		
	Emotional intelligence and resiliency (Burns, 2003).		I am aware of how others feel.	Literature Review		
			I can express myself calmly when angry or upset.	Literature Review		
			I bounce back from unexpected events quickly.	Literature Review		
		I need time to process unexpected events. (R)	Literature Review			
	I can help others change their mood.	Literature Review				
	I think obstacles are there to overcome.	Literature Review				

## Appendix D

### Liminal Leadership Scale Development Survey

#### Section A. Demographic Information

Section A consists of general demographic questions. Select from the following list as it best describes you:

1. Gender
  - a. Male
  - b. Female
  - c. Other
2. Age
  - a. Please state the year you were born:
3. Cultural/Ethnic
  - a. Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East
  - b. Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)
  - c. Spanish, Mexican, Cuban, Central or South American
  - d. African American/Black
  - e. Asian (i.e. Chinese, Japanese, Korean, or Philippine)
  - f. American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)
4. Education
  - a. Less than high school diploma
  - b. High School Diploma
  - c. Associate college
  - d. Bachelor degree
  - e. Graduate degree

The following questions should be answered with the following options:

- a. Strongly agree



- b. Agree
- c. Neither agree or disagree
- d. Disagree
- e. Strongly disagree

#### Survey Questions by Dimension

##### Adaptive Dimension

- I adapt to my followers.
- I adapt to the situation in which I find myself.
- I adapt to group behavioral norms.
- How I communicate with others depends on age and culture.
- How I communicate with others is determined by their communication preferences.
- I quickly adjust to a changing environment.
- I recover quickly from turbulence in the workplace.
- I read the situation quickly.
- I adapt my responses to the situation presented.
- I anticipate change.
- I see change as a new opportunity. (X)
- I adapt my interaction to the cultural norms of my followers.

##### Directive Dimension

- I have a plan to obtain the goal.
- I communicate my plans to my followers.
- I outline each step in the goal.
- I explain my need for requests made.
- I share information with my followers.
- I assist my followers in making sense of what is known.
- I set a standard of behavior for my followers.
- I set communication patterns for my followers.
- I encourage followers to communicate with each other professionally.
- I direct followers' actions when necessary.
- I look for ways to motivate my followers.

- I try to inspire my followers to achieve the goal.

#### Relational Dimension

- I know who my followers are as individuals.
- I develop a personal relationship with my followers.
- I use social networking sites to develop relationships. (X)
- I use social networking sites to communicate with followers. (X)
- I communicate with my followers frequently on personal matters.
- I communicate with my followers as professionals. (X)
- I frequently talk with followers about their performance.
- I acknowledge my followers' achievements frequently. (X)
- I develop a plan with my followers to achieve their personal development goals. (X)
- I express appropriate emotion around my followers.
- I acknowledge my followers' emotions.

#### Intrinsic Dimension

- I enjoy solving ambiguous problems.
- I consider multiple solutions to a problem.
- I can easily choose an action when the outcome is uncertain.
- I motivate myself when needed.
- I am aware of the emotion I am feeling.
- I regulate my emotions.
- I control my thinking well.
- I see events from multiple perspectives.
- I can express myself calmly when angry or upset.
- I bounce back from unexpected events quickly.

#### Global Transformational Leadership Scale

- I communicate a clear and positive vision of the future
- I treat staff as individuals, support and encourage their development
- I give encouragement and recognition to staff
- I foster trust, involvement and co-operation among team members

- I encourage thinking about problems in new ways and question assumptions
- I am clear about my values and practice what I preach
- I instill pride and respect in others and inspire others by being highly competent.

#### The Brief Resiliency Scale

- I tend to bounce back quickly after hard times
- I have a hard time making it through stressful events (R)
- It does not take me long to recover from a stressful event
- It is hard for me to snap back when something bad happens (R)
- I usually come through difficult times with little trouble
- I tend to take a long time to get over setbacks in my life ®

#### ENTRELEAD

- I often come up with radical improvement ideas for the products/services we are selling
- I often come up with ideas of completely new products/services that we could sell
- I take risks
- I have creative solutions to problems
- I demonstrate passion for my work
- I have a vision for the future of our business
- I challenge and push people to act in a more innovative way
- I want people to challenge the current ways we do business

## Appendix E

### Recruitment

#### EMAIL RECRUITMENT:

I am researching an adaptive leadership paradigm for my doctoral dissertation and would value your input if you lead in a situation that requires you to adapt to differing contexts, work groups, generations, cultures, ethnicities, languages, labor laws, or time zones. Follow the link below to provide your insight into this important research.

We would love to hear your opinion and invite you to complete an online survey. The survey will take approximately 10 minutes to complete.

If you have any questions please contact me [([lesliev@ou.edu](mailto:lesliev@ou.edu)), or Doo Hun Lim, PhD ([dhl@ou.edu](mailto:dhl@ou.edu))].

Here is the link to begin the survey:

[Link to be inserted here](#)

Thanks for your consideration.

Leslie Shaw VanBuskirk

Doctoral Candidate

[lesliev@ou.edu](mailto:lesliev@ou.edu)

#### SOCIAL MEDIA RECRUITMENT:

I am researching an adaptive leadership paradigm for my doctoral dissertation and would value your input if you lead in a situation that requires you to adapt to differing contexts, work groups, generations, cultures, ethnicities, languages, labor laws, or time zones.

Could you take this quick 10-minute survey? I would really appreciate it! Just click on this link:

[Liminal Leadership Scale Questionnaire](#)

### **mTurk**

#### **Survey Panel Recruitment: (compensation between \$0.10 to \$0.50) for 10 minutes**

I am researching an adaptive leadership paradigm for my doctoral dissertation and would value your input if you lead in a situation that requires you to adapt to differing contexts, work groups, generations, cultures, ethnicities, languages, labor laws, or time zones.

#### **END OF SURVEY MESSAGE**

“Thanks for sharing your opinions! If you would like a copy of our results, please provide your email address below:

Survey redirect to collect contact information to share survey results. [https://ousurvey.qualtrics.com/jfe/form/SV\\_dg1DbmooA7WOyc5](https://ousurvey.qualtrics.com/jfe/form/SV_dg1DbmooA7WOyc5)

## Appendix F

Online Consent Form – Compensated

Consent to Participate in Research at the University of Oklahoma

[OU-NC IRB Number: xxx Approval Date: xxx]

You are invited to participate in research about Liminal Leadership.

If you agree to participate, you will complete this online survey.

There are no risks or benefits.

If you participate, you will be compensated according to your agreement with mTurk.

Your participation is voluntary and your responses will be anonymous. We might share your data with other researchers or use it in future research without obtaining additional consent from you.

Even if you choose to participate now, you may stop participating at any time and for any reason.

Data are collected via an online survey system that has its own privacy and security policies for keeping your information confidential. No assurance can be made as to their use of the data you provide.

If you have questions about this research, please contact:

Leslie Shaw VanBuskirk, MPA – Principal Investigator

405-201-6816 [lesliev@ou.edu](mailto:lesliev@ou.edu)

or

Doo Hun Lim, PhD. – Faculty Advisor

405-325-7941 [dhl@ou.edu](mailto:dhl@ou.edu)

You can also contact the University of Oklahoma – Norman Campus Institutional Review Board at 405-325-8110 or [irb@ou.edu](mailto:irb@ou.edu) with questions, concerns or complaints about your rights as a research participant, or if you don't want to talk to the researcher.

Please print this document for your records. By providing information to the researcher(s), I am agreeing to participate in this research.

Are you 18 years of age or older? \_\_\_ Yes \_\_\_ No (If no- cannot participate)

## Appendix G

Online Consent Form – Uncompensated

Consent to Participate in Research at the University of Oklahoma

[OU-NC IRB Number: xxx Approval Date: xxx]

You are invited to participate in research about Liminal Leadership.

If you agree to participate, you will complete this online survey.

There are no risks, benefits, or compensation.

Your participation is voluntary and your responses will be anonymous. We might share your data with other researchers or use it in future research without obtaining additional consent from you.

Even if you choose to participate now, you may stop participating at any time and for any reason.

Data are collected via an online survey system that has its own privacy and security policies for keeping your information confidential. No assurance can be made as to their use of the data you provide.

If you have questions about this research, please contact:

Leslie Shaw VanBuskirk, MPA – Principal Investigator

405-201-6816 [lesliev@ou.edu](mailto:lesliev@ou.edu)

or

Doo Hun Lim, PhD. – Faculty Advisor

405-325-7941 [dhlim@ou.edu](mailto:dhlim@ou.edu)

You can also contact the University of Oklahoma – Norman Campus Institutional Review Board at 405-325-8110 or [irb@ou.edu](mailto:irb@ou.edu) with questions, concerns or complaints about your rights as a research participant, or if you don't want to talk to the researcher.

Please print this document for your records. By providing information to the researcher(s), I am agreeing to participate in this research.

Are you 18 years of age or older? \_\_\_ Yes \_\_\_ No (If no- cannot participate)

## Appendix H

### Generations

### Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
REGR factor score 1 for analysis 1	NR	90	.1525871	1.10893208	.11689170	-.0796742	.3848484	-1.54627	3.32255
	1946-1964	19	-.3316762	.57569427	.13207332	-.6091519	.0542004	-1.54627	.99893
	1965-1980	59	-.0038813	1.15374805	.15020520	-.3045497	.2967871	-1.36113	2.70469
	1981-1994	252	-.0027467	.95291241	.06002784	-.1209692	.1154757	-1.54627	2.72321
	After 1995	91	-.0715365	.97073798	.10176099	-.2737024	.1306295	-1.54627	3.04222
	Total	511	.0000000	1.00000000	.04423740	-.0869100	.0869100	-1.54627	3.32255
REGR factor score 1 for analysis 2	NR	89	.2363281	1.11884570	.11859741	.0006407	.4720156	-1.36336	3.23295
	1946-1964	19	-.6707631	.45671320	.10477719	-.8908918	.4506344	-1.36336	.19098
	1965-1980	59	-.1472458	1.17034873	.15236643	-.4522404	.1577487	-1.36336	2.71900
	1981-1994	252	.0210099	.97532410	.06143964	-.0999931	.1420128	-1.36336	2.71390
	After 1995	91	-.0537987	.82800626	.08679864	-.2262394	.1186419	-1.36336	2.70518
	Total	510	.0000000	1.00000000	.04428074	-.0869955	.0869955	-1.36336	3.23295
REGR factor score 1 for analysis 3	NR	86	.1056286	1.14970250	.12397561	-.1408681	.3521253	-1.59158	3.27834
	1946-1964	19	-.2947240	.65895444	.15117452	-.6123299	.0228819	-1.16730	1.10659
	1965-1980	59	.0193718	1.11551036	.14522708	-.2713317	.3100754	-1.59158	2.68183

	1981-1994	252	.0037299	.96395702	.06072358	-.1158628	.1233226	-	2.68183
	After 1995	91	-.0611778	.92764905	.09724404	-.2543700	.1320145	-	2.68183
	Total	507	.0000000	1.00000000	.04441156	-.0872538	.0872538	-	3.27834
REGR factor score 1 for analysis 4	NR	86	.2316318	1.17000394	.12616477	-.0192176	.4824812	-	3.33482
	1946-1964	19	-.5558317	.68429177	.15698730	-.8856497	.2260136	-	.80114
	1965-1980	59	-.0198143	1.19183933	.15516426	-.3304093	.2907807	-	2.76362
	1981-1994	252	-.0173346	.93647444	.05899234	-.1335177	.0988485	-	2.76362
	After 1995	91	-.0420018	.86896816	.09109261	-.2229732	.1389695	-	2.76362
	Total	507	.0000000	1.00000000	.04441156	-.0872538	.0872538	-	3.33482
REGR factor score 1 for analysis 5	NR	84	.1584095	1.08620529	.11851471	-.0773114	.3941305	-	2.68791
	1946-1964	19	-.6350749	.67603152	.15509227	-.9609117	.3092382	-	1.00335
	1965-1980	59	-.0390177	1.23268559	.16048200	-.3602573	.2822219	-	2.69334
	1981-1994	252	.0097448	.97164289	.06120775	-.1108014	.1302911	-	3.18600
	After 1995	91	-.0153146	.83561277	.08759602	-.1893394	.1587101	-	2.68791
	Total	505	.0000000	1.00000000	.04449942	-.0874272	.0874272	-	3.18600
REGR factor score 1 for analysis 6	NR	83	-.0430060	1.13613131	.12470661	-.2910871	.2050752	-	2.47115
	1946-1964	19	.2094779	.73121156	.16775144	-.1429548	.5619105	-	1.21522
	1965-1980	59	.6363197	.93219651	.12136165	.3933880	.8792515	-	2.62456
	1981-1994	252	-.0192946	.92098569	.05801665	-.1335561	.0949669	-	2.47115
	After 1995	91	-.3636396	.98445632	.10319906	-.5686626	.1586167	-	2.47115



Total	504	.0000000	1.00000000	.04454354	-.0875143	.0875143	-	2.62456
REGR factor score 1 for analysis 7	NR	82	.1185495	1.05962330	.11701582	-.1142752	.3513743	2.63652
	1946-1964	19	-.3099557	.99518926	.22831207	-.7896216	.1697101	2.88858
	1965-1980	59	.0583414	1.25902541	.16391115	-.2697625	.3864452	2.89430
	1981-1994	252	-.0012553	.93968586	.05919465	-.1178368	.1153262	2.74774
	After 1995	91	-.0764583	.91858013	.09629336	-.2677619	.1148453	2.63652
Total	503	.0000000	1.00000000	.04458780	-.0876017	.0876017	-	2.89430

### Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
REGR factor score 1 for analysis 1	3.089	4	506	.016
REGR factor score 1 for analysis 2	5.077	4	505	.001
REGR factor score 1 for analysis 3	2.861	4	502	.023
REGR factor score 1 for analysis 4	4.990	4	502	.001
REGR factor score 1 for analysis 5	4.478	4	500	.001
REGR factor score 1 for analysis 6	3.782	4	499	.005
REGR factor score 1 for analysis 7	3.719	4	498	.005

## ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
REGR factor score 1 for analysis 1	Between Groups	4.654	4	1.164	1.165	.325
	Within Groups	505.346	506	.999		
	Total	510.000	510			
REGR factor score 1 for analysis 2	Between Groups	15.173	4	3.793	3.879	.004
	Within Groups	493.827	505	.978		
	Total	509.000	509			
REGR factor score 1 for analysis 3	Between Groups	2.976	4	.744	.743	.563
	Within Groups	503.024	502	1.002		
	Total	506.000	506			
REGR factor score 1 for analysis 4	Between Groups	10.744	4	2.686	2.722	.029
	Within Groups	495.256	502	.987		
	Total	506.000	506			
REGR factor score 1 for analysis 5	Between Groups	9.906	4	2.477	2.506	.041
	Within Groups	494.094	500	.988		
	Total	504.000	504			
REGR factor score 1 for analysis 6	Between Groups	37.004	4	9.251	9.906	.000
	Within Groups	465.996	499	.934		
	Total	503.000	503			
The REGR factor score 1 for analysis 7	Between Groups	3.711	4	.928	.927	.448
	Within Groups	498.289	498	1.001		
	Total	502.000	502			

## Post Hoc Tests

### Multiple Comparisons

Dependent Variable				Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
							Lower Bound	Upper Bound
REGR factor score 1 for analysis 1	Tukey HSD	No response	1946-1964	.48426329	.25230991	.308	-.2064704	1.1749970
			1965-1980	.15646841	.16740367	.883	-.3018226	.6147594
			1981-1994	.15533385	.12271867	.712	-.1806257	.4912934
			After 1995	.22412358	.14856498	.557	-.1825938	.6308410
	1946-1964	No response	1946-1964	-.48426329	.25230991	.308	-1.1749970	.2064704
			1965-1980	-.32779488	.26361105	.726	-1.0494670	.3938772
			1981-1994	-.32892944	.23775337	.639	-.9798126	.3219537
			After 1995	-.26013971	.25206814	.840	-.9502115	.4299321
	1965-1980	No response	1965-1980	-.15646841	.16740367	.883	-.6147594	.3018226
			1946-1964	.32779488	.26361105	.726	-.3938772	1.0494670
			1981-1994	-.00113456	.14453500	1.000	-.3968193	.3945502
			After 1995	.06765517	.16703906	.994	-.3896376	.5249480
	1981-1994	No response	1981-1994	-.15533385	.12271867	.712	-.4912934	.1806257
			1946-1964	.32892944	.23775337	.639	-.3219537	.9798126
			1965-1980	.00113456	.14453500	1.000	-.3945502	.3968193
			After 1995	.06878973	.12222082	.980	-.2658069	.4033863
	After 1995	No response	After 1995	-.22412358	.14856498	.557	-.6308410	.1825938
			1946-1964	.26013971	.25206814	.840	-.4299321	.9502115
			1965-1980	-.06765517	.16703906	.994	-.5249480	.3896376
			1981-1994	-.06878973	.12222082	.980	-.4033863	.2658069
Games-Howell	No response	1946-1964	.48426329	.17637186	.061	-.0145006	.9830272	
		1965-1980	.15646841	.19032938	.923	-.3706402	.6835770	
		1981-1994	.15533385	.13140400	.762	-.2078655	.5185332	
		After 1995	.22412358	.15498055	.599	-.2030591	.6513062	
	1946-1964	No response	-.48426329	.17637186	.061	-.9830272	.0145006	

			1965-1980	-.32779488	.20001241	.479	-.8896788	.2340891
			1981-1994	-.32892944	.14507482	.188	-.7536283	.0957695
			After 1995	-.26013971	.16672931	.530	-.7349402	.2146608
		1965-1980	No response	-.15646841	.19032938	.923	-.6835770	.3706402
			1946-1964	.32779488	.20001241	.479	-.2340891	.8896788
			1981-1994	-.00113456	.16175582	1.000	-.4529182	.4506491
			After 1995	.06765517	.18143016	.996	-.4356499	.5709602
		1981-1994	No response	-.15533385	.13140400	.762	-.5185332	.2078655
			1946-1964	.32892944	.14507482	.188	-.0957695	.7536283
			1965-1980	.00113456	.16175582	1.000	-.4506491	.4529182
			After 1995	.06878973	.11814669	.978	-.2572709	.3948503
		After 1995	No response	-.22412358	.15498055	.599	-.6513062	.2030591
			1946-1964	.26013971	.16672931	.530	-.2146608	.7349402
			1965-1980	-.06765517	.18143016	.996	-.5709602	.4356499
			1981-1994	-.06878973	.11814669	.978	-.3948503	.2572709
REGR	Tukey	No	1946-1964	.90709124*	.24990892	.003	.2229257	1.5912568
factor score	HSD	response	1965-1980	.38357396	.16601661	.143	-.0709230	.8380709
1 for			1981-1994	.21531827	.12193366	.395	-.1184946	.5491311
analysis 2			After 1995	.29012687	.14742198	.283	-.1134643	.6937181
		1946-1964	No response	-.90709124*	.24990892	.003	-1.5912568	-.2229257
			1965-1980	-.52351728	.26084720	.264	-1.2376281	.1905935
			1981-1994	-.69177297*	.23526063	.028	-1.3358365	-.0477095
			After 1995	-.61696436	.24942532	.098	-1.2998059	.0658772
		1965-1980	No response	-.38357396	.16601661	.143	-.8380709	.0709230
			1946-1964	.52351728	.26084720	.264	-.1905935	1.2376281
			1981-1994	-.16825569	.14301961	.765	-.5597947	.2232833
			After 1995	-.09344708	.16528773	.980	-.5459486	.3590544
		1981-1994	No response	-.21531827	.12193366	.395	-.5491311	.1184946
			1946-1964	.69177297*	.23526063	.028	.0477095	1.3358365
			1965-1980	.16825569	.14301961	.765	-.2232833	.5597947

		After 1995		.07480861	.12093939	.972	-.2562823	.4058995
	After 1995	No response		-.29012687	.14742198	.283	-.6937181	.1134643
		1946-1964		.61696436	.24942532	.098	-.0658772	1.2998059
		1965-1980		.09344708	.16528773	.980	-.3590544	.5459486
		1981-1994		-.07480861	.12093939	.972	-.4058995	.2562823
Games-Howell	No response	1946-1964		.90709124*	.15825171	.000	.4639830	1.3501995
		1965-1980		.38357396	.19308255	.279	-.1511761	.9183240
		1981-1994		.21531827	.13356712	.492	-.1538820	.5845185
		After 1995		.29012687	.14696717	.283	-.1153164	.6955701
	1946-1964	No response		-.90709124*	.15825171	.000	-1.3501995	-.4639830
		1965-1980		-.52351728*	.18491562	.046	-1.0407270	-.0063076
		1981-1994		-.69177297*	.12146230	.000	-1.0425780	-.3409679
		After 1995		-.61696436*	.13605978	.000	-1.0029687	-.2309600
	1965-1980	No response		-.38357396	.19308255	.279	-.9183240	.1511761
		1946-1964		.52351728*	.18491562	.046	.0063076	1.0407270
		1981-1994		-.16825569	.16428742	.843	-.6270584	.2905470
		After 1995		-.09344708	.17535544	.984	-.5810585	.3941644
	1981-1994	No response		-.21531827	.13356712	.492	-.5845185	.1538820
		1946-1964		.69177297*	.12146230	.000	.3409679	1.0425780
		1965-1980		.16825569	.16428742	.843	-.2905470	.6270584
		After 1995		.07480861	.10634300	.955	-.2181363	.3677535
	After 1995	No response		-.29012687	.14696717	.283	-.6955701	.1153164
		1946-1964		.61696436*	.13605978	.000	.2309600	1.0029687
		1965-1980		.09344708	.17535544	.984	-.3941644	.5810585
		1981-1994		-.07480861	.10634300	.955	-.3677535	.2181363
REGR factor score 1 for analysis 3	Tukey HSD	No response	1946-1964	.40035263	.25375292	.512	-.2943515	1.0950567
			1965-1980	.08625679	.16921981	.986	-.3770194	.5495330
			1981-1994	.10189873	.12501188	.926	-.2403486	.4441461
			After 1995	.16680638	.15054251	.802	-.2453366	.5789494

1946-1964	No response	-.40035263	.25375292	.512	-1.0950567	.2943515
	1965-1980	-.31409584	.26405046	.757	-1.0369917	.4088000
	1981-1994	-.29845390	.23814968	.720	-.9504407	.3535329
	After 1995	-.23354625	.25248831	.887	-.9247882	.4576957
1965-1980	No response	-.08625679	.16921981	.986	-.5495330	.3770194
	1946-1964	.31409584	.26405046	.757	-.4088000	1.0369917
	1981-1994	.01564194	.14477592	1.000	-.3807138	.4119977
	After 1995	.08054959	.16731750	.989	-.3775186	.5386178
1981-1994	No response	-.10189873	.12501188	.926	-.4441461	.2403486
	1946-1964	.29845390	.23814968	.720	-.3535329	.9504407
	1965-1980	-.01564194	.14477592	1.000	-.4119977	.3807138
	After 1995	.06490765	.12242455	.984	-.2702563	.4000716
After 1995	No response	-.16680638	.15054251	.802	-.5789494	.2453366
	1946-1964	.23354625	.25248831	.887	-.4576957	.9247882
	1965-1980	-.08054959	.16731750	.989	-.5386178	.3775186
	1981-1994	-.06490765	.12242455	.984	-.4000716	.2702563
Games-Howell	No response	.40035263	.19550879	.260	-.1547035	.9554088
	1946-1964	.08625679	.19094726	.991	-.4421493	.6146629
	1965-1980	.10189873	.13804820	.947	-.2800798	.4838772
	1981-1994	.16680638	.15756381	.827	-.2678309	.6014437
1946-1964	No response	-.40035263	.19550879	.260	-.9554088	.1547035
	1946-1964	-.31409584	.20962977	.568	-.9062103	.2780187
	1965-1980	-.29845390	.16291436	.379	-.7780470	.1811392
	1981-1994	-.23354625	.17975021	.693	-.7505070	.2834145
1965-1980	No response	-.08625679	.19094726	.991	-.6146629	.4421493
	1946-1964	.31409584	.20962977	.568	-.2780187	.9062103
	1965-1980	.01564194	.15741111	1.000	-.4237522	.4550361
	1981-1994	.08054959	.17477788	.991	-.4043764	.5654756
1981-1994	No response	-.10189873	.13804820	.947	-.4838772	.2800798
	1946-1964	.29845390	.16291436	.379	-.1811392	.7780470

			1965-1980	-.01564194	.15741111	1.000	-.4550361	.4237522	
			After 1995	.06490765	.11464623	.980	-.2513095	.3811248	
		After 1995	No response	-.16680638	.15756381	.827	-.6014437	.2678309	
			1946-1964	.23354625	.17975021	.693	-.2834145	.7505070	
			1965-1980	-.08054959	.17477788	.991	-.5654756	.4043764	
			1981-1994	-.06490765	.11464623	.980	-.3811248	.2513095	
REGR factor score 1 for analysis 4	Tukey HSD	No response	1946-1964	.78746347*	.25178613	.016	.0981439	1.4767831	
			1965-1980	.25144612	.16790821	.565	-.2082393	.7111316	
			1981-1994	.24896641	.12404293	.264	-.0906283	.5885611	
			After 1995	.27363363	.14937568	.356	-.1353149	.6825822	
		No response	1946-1964	-.78746347*	.25178613	.016	-1.4767831	-.0981439	
	1965-1980		-.53601735	.26200385	.246	-1.2533102	.1812755		
	1981-1994		-.53849707	.23630382	.153	-1.1854305	.1084363		
	After 1995		-.51382984	.25053132	.243	-1.1997141	.1720544		
		No response	1965-1980	-.25144612	.16790821	.565	-.7111316	.2082393	
	1946-1964		.53601735	.26200385	.246	-.1812755	1.2533102		
	1981-1994		-.00247972	.14365379	1.000	-.3957634	.3908040		
	After 1995		.02218751	.16602065	1.000	-.4323303	.4767053		
		No response	1981-1994	-.24896641	.12404293	.264	-.5885611	.0906283	
	1946-1964		.53849707	.23630382	.153	-.1084363	1.1854305		
	1965-1980		.00247972	.14365379	1.000	-.3908040	.3957634		
	After 1995		.02466723	.12147566	1.000	-.3078990	.3572334		
		No response	After 1995	-.27363363	.14937568	.356	-.6825822	.1353149	
	1946-1964		.51382984	.25053132	.243	-.1720544	1.1997141		
	1965-1980		-.02218751	.16602065	1.000	-.4767053	.4323303		
	1981-1994		-.02466723	.12147566	1.000	-.3572334	.3078990		
		Games-Howell	No response	1946-1964	.78746347*	.20140149	.003	.2150875	1.3598394
	1965-1980			.25144612	.19998374	.718	-.3022225	.8051148	
	1981-1994			.24896641	.13927543	.385	-.1365836	.6345164	
	After 1995			.27363363	.15561302	.402	-.1558323	.7030995	
		No response	1946-1964	-.78746347*	.20140149	.003	-1.3598394	-.2150875	

			1965-1980	-.53601735	.22072825	.123	-1.1588232	.0867885
			1981-1994	-.53849707*	.16770542	.028	-1.0335347	-.0434595
			After 1995	-.51382984	.18150173	.057	-1.0387943	.0111346
		1965-1980	No response	-.25144612	.19998374	.718	-.8051148	.3022225
			1946-1964	.53601735	.22072825	.123	-.0867885	1.1588232
			1981-1994	-.00247972	.16600014	1.000	-.4663992	.4614397
			After 1995	.02218751	.17992724	1.000	-.4779263	.5223013
		1981-1994	No response	-.24896641	.13927543	.385	-.6345164	.1365836
			1946-1964	.53849707*	.16770542	.028	.0434595	1.0335347
			1965-1980	.00247972	.16600014	1.000	-.4614397	.4663992
			After 1995	.02466723	.10852632	.999	-.2745592	.3238937
		After 1995	No response	-.27363363	.15561302	.402	-.7030995	.1558323
			1946-1964	.51382984	.18150173	.057	-.0111346	1.0387943
			1965-1980	-.02218751	.17992724	1.000	-.5223013	.4779263
			1981-1994	-.02466723	.10852632	.999	-.3238937	.2745592
REGR	Tukey	No	1946-1964	.79348449*	.25253521	.015	.1021041	1.4848649
factor score	HSD	response	1965-1980	.19742724	.16885819	.769	-.2648657	.6597202
1 for			1981-1994	.14866472	.12524186	.759	-.1942172	.4915467
analysis 5			After 1995	.17372419	.15041060	.777	-.2380637	.5855121
		1946-1964	No response	-.79348449*	.25253521	.015	-1.4848649	-.1021041
			1965-1980	-.59605725	.26221907	.155	-1.3139497	.1218352
			1981-1994	-.64481977	.23649793	.052	-1.2922940	.0026545
			After 1995	-.61976030	.25073711	.099	-1.3062180	.0666974
		1965-1980	No response	-.19742724	.16885819	.769	-.6597202	.2648657
			1946-1964	.59605725	.26221907	.155	-.1218352	1.3139497
			1981-1994	-.04876253	.14377179	.997	-.4423750	.3448499
			After 1995	-.02370306	.16615702	1.000	-.4786009	.4311948
		1981-1994	No response	-.14866472	.12524186	.759	-.4915467	.1942172
			1946-1964	.64481977	.23649793	.052	-.0026545	1.2922940
			1965-1980	.04876253	.14377179	.997	-.3448499	.4423750



		After 1995		.02505947	.12157544	1.000	-.3077847	.3579037
	After 1995	No response		-.17372419	.15041060	.777	-.5855121	.2380637
		1946-1964		.61976030	.25073711	.099	-.0666974	1.3062180
		1965-1980		.02370306	.16615702	1.000	-.4311948	.4786009
		1981-1994		-.02505947	.12157544	1.000	-.3579037	.3077847
Games-Howell	No response	1946-1964		.79348449*	.19519054	.002	.2372586	1.3497103
		1965-1980		.19742724	.19949989	.860	-.3555184	.7503729
		1981-1994		.14866472	.13338713	.799	-.2203378	.5176672
		After 1995		.17372419	.14737300	.763	-.2330287	.5804771
	1946-1964	No response		-.79348449*	.19519054	.002	-1.3497103	-.2372586
		1965-1980		-.59605725	.22317724	.071	-1.2247760	.0326615
		1981-1994		-.64481977*	.16673332	.006	-1.1360178	-.1536217
		After 1995		-.61976030*	.17811983	.012	-1.1356954	-.1038252
	1965-1980	No response		-.19742724	.19949989	.860	-.7503729	.3555184
		1946-1964		.59605725	.22317724	.071	-.0326615	1.2247760
		1981-1994		-.04876253	.17175814	.999	-.5287558	.4312308
		After 1995		-.02370306	.18283198	1.000	-.5324084	.4850023
	1981-1994	No response		-.14866472	.13338713	.799	-.5176672	.2203378
		1946-1964		.64481977*	.16673332	.006	.1536217	1.1360178
		1965-1980		.04876253	.17175814	.999	-.4312308	.5287558
		After 1995		.02505947	.10686183	.999	-.2693524	.3194714
	After 1995	No response		-.17372419	.14737300	.763	-.5804771	.2330287
		1946-1964		.61976030*	.17811983	.012	.1038252	1.1356954
		1965-1980		.02370306	.18283198	1.000	-.4850023	.5324084
		1981-1994		-.02505947	.10686183	.999	-.3194714	.2693524
REGR factor score 1 for analysis 6	Tukey HSD	No response	1946-1964	-.25248382	.24576795	.843	-.9253421	.4203744
			1965-1980	-.67932568*	.16455843	.000	-1.1298502	-.2288011
			1981-1994	-.02371135	.12229933	1.000	-.3585399	.3111172
			After 1995	.32063367	.14667493	.187	-.0809298	.7221972

1946-1964	No response	.25248382	.24576795	.843	-.4203744	.9253421	
	1965-1980	-.42684186	.25490920	.451	-1.1247268	.2710431	
	1981-1994	.22877247	.22990509	.858	-.4006568	.8582017	
	After 1995	.57311749	.24374732	.131	-.0942087	1.2404437	
1965-1980	No response	.67932568*	.16455843	.000	.2288011	1.1298502	
	1946-1964	.42684186	.25490920	.451	-.2710431	1.1247268	
	1981-1994	.65561433*	.13976387	.000	.2729718	1.0382569	
	After 1995	.99995935*	.16152507	.000	.5577395	1.4421792	
1981-1994	No response	.02371135	.12229933	1.000	-.3111172	.3585399	
	1946-1964	-.22877247	.22990509	.858	-.8582017	.4006568	
	1965-1980	-.65561433*	.13976387	.000	-1.0382569	-.2729718	
	After 1995	.34434502*	.11818629	.030	.0207771	.6679129	
After 1995	No response	-.32063367	.14667493	.187	-.7221972	.0809298	
	1946-1964	-.57311749	.24374732	.131	-1.2404437	.0942087	
	1965-1980	-.99995935*	.16152507	.000	-1.4421792	-.5577395	
	1981-1994	-.34434502*	.11818629	.030	-.6679129	-.0207771	
Games-Howell	No response	1946-1964	-.25248382	.20902699	.747	-.8490314	.3440637
		1965-1980	-.67932568*	.17401261	.001	-1.1603712	-.1982801
		1981-1994	-.02371135	.13754152	1.000	-.4046832	.3572605
		After 1995	.32063367	.16186966	.280	-.1258899	.7671572
1946-1964	No response	.25248382	.20902699	.747	-.3440637	.8490314	
	1965-1980	-.42684186	.20704877	.257	-1.0192598	.1655761	
	1981-1994	.22877247	.17750064	.700	-.2967949	.7543398	
	After 1995	.57311749*	.19695327	.047	.0052824	1.1409526	
1965-1980	No response	.67932568*	.17401261	.001	.1982801	1.1603712	
	1946-1964	.42684186	.20704877	.257	-.1655761	1.0192598	
	1981-1994	.65561433*	.13451610	.000	.2808312	1.0303974	
	After 1995	.99995935*	.15930692	.000	.5591887	1.4407300	

		1981-1994	No response	.02371135	.13754152	1.000	-.3572605	.4046832
			1946-1964	-.22877247	.17750064	.700	-.7543398	.2967949
			1965-1980	-.65561433*	.13451610	.000	-1.0303974	-.2808312
			After 1995	.34434502*	.11838909	.034	.0174570	.6712330
		After 1995	No response	-.32063367	.16186966	.280	-.7671572	.1258899
			1946-1964	-.57311749*	.19695327	.047	-1.1409526	-.0052824
			1965-1980	-.99995935*	.15930692	.000	-1.4407300	-.5591887
			1981-1994	-.34434502*	.11838909	.034	-.6712330	-.0174570
REGR factor score 1 for analysis 7	Tukey HSD	No response	1946-1964	.42850530	.25468475	.446	-.2687703	1.1257809
			1965-1980	.06020820	.17076647	.997	-.4073160	.5277324
			1981-1994	.11980485	.12717215	.880	-.2283669	.4679766
			After 1995	.19500787	.15230754	.703	-.2219795	.6119953
		1946-1964	No response	-.42850530	.25468475	.446	-1.1257809	.2687703
			1965-1980	-.36829710	.26385813	.631	-1.0906876	.3540933
			1981-1994	-.30870044	.23797622	.693	-.9602314	.3428305
			After 1995	-.23349743	.25230440	.887	-.9242561	.4572612
		1965-1980	No response	-.06020820	.17076647	.997	-.5277324	.4073160
			1946-1964	.36829710	.26385813	.631	-.3540933	1.0906876
			1981-1994	.05959666	.14467047	.994	-.3364820	.4556753
			After 1995	.13479967	.16719562	.929	-.3229483	.5925476
		1981-1994	No response	-.11980485	.12717215	.880	-.4679766	.2283669
			1946-1964	.30870044	.23797622	.693	-.3428305	.9602314
			1965-1980	-.05959666	.14467047	.994	-.4556753	.3364820
			After 1995	.07520302	.12233538	.973	-.2597266	.4101327
		After 1995	No response	-.19500787	.15230754	.703	-.6119953	.2219795
			1946-1964	.23349743	.25230440	.887	-.4572612	.9242561
			1965-1980	-.13479967	.16719562	.929	-.5925476	.3229483

		1981-1994	-.07520302	.12233538	.973	-.4101327	.2597266	
Games- Howell	No response	1946-1964	.42850530	.25655234	.467	-.3184916	1.1755022	
		1965-1980	.06020820	.20139406	.998	-.4982458	.6186622	
		1981-1994	.11980485	.13113622	.891	-.2431753	.4827850	
		After 1995	.19500787	.15154245	.700	-.2230801	.6130958	
		1946- 1964	No response	-.42850530	.25655234	.467	-1.1755022	.3184916
		1965-1980	-.36829710	.28105741	.687	-1.1727880	.4361938	
		1981-1994	-.30870044	.23586100	.689	-1.0128882	.3954873	
		After 1995	-.23349743	.24778784	.878	-.9616209	.4946260	
		1965- 1980	No response	-.06020820	.20139406	.998	-.6186622	.4982458
		1946-1964	.36829710	.28105741	.687	-.4361938	1.1727880	
		1981-1994	.05959666	.17427240	.997	-.4277285	.5469218	
		After 1995	.13479967	.19010333	.954	-.3935939	.6631932	
		1981- 1994	No response	-.11980485	.13113622	.891	-.4827850	.2431753
		1946-1964	.30870044	.23586100	.689	-.3954873	1.0128882	
		1965-1980	-.05959666	.17427240	.997	-.5469218	.4277285	
		After 1995	.07520302	.11303282	.963	-.2366137	.3870198	
		After 1995	No response	-.19500787	.15154245	.700	-.6130958	.2230801
		1946-1964	.23349743	.24778784	.878	-.4946260	.9616209	
		1965-1980	-.13479967	.19010333	.954	-.6631932	.3935939	
		1981-1994	-.07520302	.11303282	.963	-.3870198	.2366137	

## Appendix I

### Culture/Ethnicity

### Descriptives

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
REGR factor score 1 for analysis 1 Caucasian /White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	163	-.1271836	.84965780	.06655034	-.2586016	.0042343	-1.54627	2.70796
Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	148	-.0555175	1.05164072	.08644433	-.2263516	.1153167	-1.54627	2.70478
Spanish, Mexican, Cuban, Central or South American	22	.0363029	1.01026656	.21538955	-.4116242	.4842300	-1.08040	1.99214
African American /Black	25	-.1184390	.87220057	.17444011	-.4784657	.2415877	-1.54627	1.50769

	Asian (i.e. Chinese, Japanese, Korean, or Philippine )	115	.1802087	1.02011997	.09512668	-.0082365	.3686539	-1.54627	3.04222
	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	23	-.0431026	.98006231	.20435712	-.4669133	.3807081	-1.34720	2.11073
	Total	496	-.0229379	.97023382	.04356478	-.1085326	.0626568	-1.54627	3.04222
REGR factor score 1 for analysis 2	Caucasian /White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	163	-.2047150	.93208375	.07300643	-.3488819	-.0605480	-1.36336	2.70518

Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	148	.0617691	.98761725	.08118164	-.0986648	.2222030	-1.36336	2.71900
Spanish, Mexican, Cuban, Central or South American	22	-.2248432	.94772788	.20205626	-.6450422	.1953558	-1.36336	2.10865
African American /Black	25	-.0871850	.89545248	.17909050	-.4568096	.2824396	-1.36336	1.76548
Asian (i.e. Chinese, Japanese, Korean, or Philippine )	115	.1716986	.96927990	.09038582	-.0073550	.3507523	-1.36336	2.70518
American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	23	.0678279	.96536796	.20129313	-.3496285	.4852843	-.95135	2.27623
Total	496	-.0202571	.96591072	.04337067	-.1054704	.0649563	-1.36336	2.71900

REGR factor score 1 for analysis 3	Caucasian /White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	163	-.0476902	.90375022	.07078718	-.1874748	.0920944	-1.59158	2.65737
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	148	-.1095215	1.00065649	.08225346	-.2720735	.0530305	-1.59158	2.68183
	Spanish, Mexican, Cuban, Central or South American	22	-.1144006	.79652597	.16981991	-.4675604	.2387592	-1.14853	1.22324
	African American /Black	25	-.2655133	.93558266	.18711653	-.6517029	.1206762	-1.59158	1.48288
	Asian (i.e. Chinese, Japanese, Korean, or Philippine )	115	.1716765	.99977681	.09322967	-.0130108	.3563637	-1.27938	2.66359



	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	23	.0297827	1.07112153	.22334428	-.4334050	.4929704	-1.13324	2.18654
	Total	496	-.0256241	.96432337	.04329940	-.1106973	.0594492	-1.59158	2.68183
REGR factor score 1 for analysis 4	Caucasian /White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	163	-.1425895	.94391415	.07393306	-.2885862	.0034073	-1.47274	2.76362
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	148	-.0646506	1.01816727	.08369283	-.2300472	.1007460	-1.47274	2.76362

Spanish, Mexican, Cuban, Central or South American	22	-.2344826	.88225589	.18809759	-.6256529	.1566878	-1.36146	1.81878
African American /Black	25	-.1942650	.89672044	.17934409	-.5644130	.1758830	-1.47274	1.62758
Asian (i.e. Chines, Japanese, Korean, or Philippine )	115	.2416468	.92484513	.08624225	.0708016	.4124920	-1.47274	2.70414
American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identificat ion through tribal affiliation or communit y recognitio n)	23	-.0124724	.86043218	.17941251	-.3845512	.3596064	-.88361	1.89521
Total	496	-.0308933	.96242459	.04321414	-.1157991	.0540124	-1.47274	2.76362

REGR factor score 1 for analysis 5	Caucasian /White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	163	-.2133714	.97333791	.07623771	-.3639192	-.0628236	-1.28841	2.68791
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	148	.0498317	1.00871226	.08291564	-.1140289	.2136924	-1.28841	3.18600
	Spanish, Mexican, Cuban, Central or South American	22	-.3191055	.97033059	.20687518	-.7493260	.1111149	-1.28841	2.35357
	African American /Black	25	-.1690726	.99874908	.19974982	-.5813359	.2431908	-1.28841	2.17869
	Asian (i.e. Chinese, Japanese, Korean, or Philippine )	115	.2385118	.91184147	.08502966	.0700687	.4069549	-1.28841	2.85194

	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	23	.1686154	.84336952	.17585470	-.1960849	.5333158	-.63302	2.21832
	Total	496	-.0148076	.97961651	.04398608	-.1012301	.0716148	-1.28841	3.18600
REGR factor score 1 for analysis 6	Caucasian /White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	163	.3141444	.80620421	.06314679	.1894474	.4388413	-1.95401	2.36637
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	148	-.3566555	1.06331637	.08740407	-.5293863	-.1839247	-1.95401	2.62456

Spanish, Mexican, Cuban, Central or South American	22	.2911530	1.00686489	.21466431	-.1552659	.7375719	-1.40774	1.69668
African American /Black	25	.0827438	1.03420674	.20684135	-.3441557	.5096434	-1.95401	1.73207
Asian (i.e. Chines, Japanese, Korean, or Philippine )	115	-.0243182	.97188585	.09062882	-.2038532	.1552168	-1.72874	2.39326
American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identificat ion through tribal affiliation or communit y recognitio n)	23	-.3584286	.94759696	.19758763	-.7682003	.0513430	-1.40774	1.56348
Total	496	-.0083588	.99069312	.04448343	-.0957584	.0790408	-1.95401	2.62456

REGR factor score 1 for analysis 7	Caucasian /White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	163	.0059810	.97643926	.07648063	-.1450465	.1570085	-1.50046	2.88858
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	148	-.1389774	.99103334	.08146244	-.2999662	.0220114	-1.50046	2.89430
	Spanish, Mexican, Cuban, Central or South American	22	-.3076500	.91191043	.19441996	-.7119684	.0966684	-1.37495	2.16778
	African American /Black	25	-.0769299	.94114640	.18822928	-.4654160	.3115563	-1.50046	1.44913
	Asian (i.e. Chinese, Japanese, Korean, or Philippine )	115	.2044658	.97162607	.09060460	.0249788	.3839528	-1.50046	2.58495

American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	23	-.0729601	.95679956	.19950650	-.4867113	.3407910	-1.07095	2.01145
Total	496	-.0130037	.97985455	.04399677	-.0994471	.0734398	-1.50046	2.89430

### Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
REGR factor score 1 for analysis 1	1.892	5	490	.094
REGR factor score 1 for analysis 2	.159	5	490	.977
REGR factor score 1 for analysis 3	.665	5	490	.650
REGR factor score 1 for analysis 4	.068	5	490	.997
REGR factor score 1 for analysis 5	.306	5	490	.910
REGR factor score 1 for analysis 6	2.994	5	490	.011
REGR factor score 1 for analysis 7	.180	5	490	.970

### ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
REGR factor score 1 for analysis 1	Between Groups	6.989	5	1.398	1.492	.191
	Within Groups	458.981	490	.937		
	Total	465.970	495			
REGR factor score 1 for analysis 2	Between Groups	11.990	5	2.398	2.612	.024
	Within Groups	449.836	490	.918		
	Total	461.827	495			
REGR factor score 1 for analysis 3	Between Groups	7.280	5	1.456	1.575	.166
	Within Groups	453.030	490	.925		
	Total	460.310	495			
REGR factor score 1 for analysis 4	Between Groups	12.331	5	2.466	2.709	.020
	Within Groups	446.168	490	.911		
	Total	458.499	495			
REGR factor score 1 for analysis 5	Between Groups	17.831	5	3.566	3.822	.002
	Within Groups	457.195	490	.933		
	Total	475.026	495			
REGR factor score 1 for analysis 6	Between Groups	39.936	5	7.987	8.777	.000
	Within Groups	445.893	490	.910		
	Total	485.829	495			
REGR factor score 1 for analysis 7	Between Groups	9.941	5	1.988	2.094	.065
	Within Groups	465.316	490	.950		
	Total	475.257	495			

## Post Hoc Tests

### Multiple Comparisons

Dependent Variable	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
				Lower Bound	Upper Bound



REGR factor score 1 for analysis 1	Tukey HSD	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	- .07166618	.1098891 8	.987	- .3860628	.242730 4
		Spanish, Mexican, Cuban, Central or South American	Spanish, Mexican, Cuban, Central or South American	- .16348652	.2198265 4	.976	- .7924176	.465444 6
		African American/Black	African American/Black	- .00874466	.2078808 6	1.00 0	- .6034988	.586009 5
		Asian (i.e. Chinese, Japanese, Korean, or Philippine)	Asian (i.e. Chinese, Japanese, Korean, or Philippine)	- .30739235	.1178634 3	.097	- .6446036	.029818 9
		American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	- .08408107	.2155748 8	.999	- .7008480	.532685 9
		Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	.07166618	.1098891 8	.987	- .2427304	.386062 8
		Spanish, Mexican, Cuban, Central or South American	Spanish, Mexican, Cuban, Central or South American	- .09182034	.2211473 1	.998	- .7245302	.540889 5

	African American/Black	.06292152	.2092770 4	1.00 0	- .5358271	.661670 1
	Asian (i.e. Chines, Japanese, Korean, or Philippine)	- .23572617	.1203088 3	.367	- .5799337	.108481 4
	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	- .01241489	.2169215 4	1.00 0	- .6330347	.608204 9
Spanish, Mexican, Cuban, Central or South American	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	.16348652	.2198265 4	.976	- .4654446	.792417 6
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	.09182034	.2211473 1	.998	- .5408895	.724530 2
	African American/Black	.15474186	.2829221 7	.994	- .6547079	.964191 7
	Asian (i.e. Chines, Japanese, Korean, or Philippine)	- .14390583	.2252160 9	.988	- .7882566	.500444 9

	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	.07940545	.28862264	1.000	- .7463536	.9051645
African American/Black	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	.00874466	.20788086	1.000	- .5860095	.6034988
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	- .06292152	.20927704	1.000	- .6616701	.5358271
	Spanish, Mexican, Cuban, Central or South American	- .15474186	.28292217	.994	- .9641917	.6547079
	Asian (i.e. Chinese, Japanese, Korean, or Philippine)	- .29864769	.21357209	.728	- .9096846	.3123892

	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	- .07533641	.2796315 0	1.00 0	- .8753715	.724698 7
Asian (i.e. Chinese, Japanese, Korean, or Philippine)	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	.30739235	.1178634 3	.097	- .0298189	.644603 6
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	.23572617	.1203088 3	.367	- .1084814	.579933 7
	Spanish, Mexican, Cuban, Central or South American	.14390583	.2252160 9	.988	- .5004449	.788256 6
	African American/Black	.29864769	.2135720 9	.728	- .3123892	.909684 6
	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural	.22331128	.2210681 1	.915	- .4091720	.855794 5

		identification through tribal affiliation or community recognition)					
	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	.08408107	.21557488	.999	- .5326859	.7008480
		Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	.01241489	.21692154	1.000	- .6082049	.6330347
		Spanish, Mexican, Cuban, Central or South American	- .07940545	.28862264	1.000	- .9051645	.7463536
		African American/Black	.07533641	.27963150	1.000	- .7246987	.8753715
		Asian (i.e. Chinese, Japanese, Korean, or Philippine)	- .22331128	.22106811	.915	- .8557945	.4091720
Games-Howell	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	- .07166618	.10909432	.986	- .3846981	.2413658
		Spanish, Mexican, Cuban, Central	- .16348652	.22543648	.977	- .8578608	.5308877

	or South American					
	African American/Black	- .00874466	.18670378	1.000	- .5749691	.5574797
	Asian (i.e. Chines, Japanese, Korean, or Philippine)	- .30739235	.11609493	.090	- .6412152	.0264305
	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	- .08408107	.21492040	.999	- .7427915	.5746294
Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	.07166618	.10909432	.986	- .2413658	.3846981
	Spanish, Mexican, Cuban, Central or South American	- .09182034	.23208895	.999	- .8006926	.6170519
	African American/Black	.06292152	.19468430	.999	- .5220462	.6478893
	Asian (i.e. Chines, Japanese, Korean, or Philippine)	- .23572617	.12853680	.446	- .6048951	.1334428

	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	.01241489	.22188838	1.000	.6866821	.6618523
Spanish, Mexican, Cuban, Central or South American	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	.16348652	.22543648	.977	.5308877	.8578608
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	.09182034	.23208895	.999	.6170519	.8006926
	African American/Black	.15474186	.27716784	.993	.6728258	.9823096
	Asian (i.e. Chinese, Japanese, Korean, or Philippine)	.14390583	.23546071	.989	.8604247	.5726131
	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural	.07940545	.29690822	1.000	.8062101	.9650210

	identification through tribal affiliation or community recognition)					
African American/Black	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	.00874466	.18670378	1.000	- .5574797	.5749691
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	- .06292152	.19468430	.999	- .6478893	.5220462
	Spanish, Mexican, Cuban, Central or South American	- .15474186	.27716784	.993	- .9823096	.6728258
	Asian (i.e. Chinese, Japanese, Korean, or Philippine)	- .29864769	.19869182	.664	- .8934293	.2961339
	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or	- .07533641	.26868417	1.000	- .8755492	.7248763



	community recognition)					
Asian (i.e. Chinese, Japanese, Korean, or Philippine)	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	.30739235	.11609493	.090	- .0264305	.6412152
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	.23572617	.12853680	.446	- .1334428	.6048951
	Spanish, Mexican, Cuban, Central or South American	.14390583	.23546071	.989	- .5726131	.8604247
	African American/Black	.29864769	.19869182	.664	- .2961339	.8934293
	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	.22331128	.22541277	.918	- .4591439	.9057664

American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East)	.08408107	.21492040	.999	- .5746294	.7427915
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	.01241489	.22188838	1.000	- .6618523	.6866821
	Spanish, Mexican, Cuban, Central or South American	- .07940545	.29690822	1.000	- .9650210	.8062101
	African American/Black	.07533641	.26868417	1.000	- .7248763	.8755492
	Asian (i.e. Chines, Japanese, Korean, or Philippine)	- .22331128	.22541277	.918	- .9057664	.4591439

REGR factor score 1 for analysis 2	Tukey HSD	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East)	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	- .26648406	.10878895	.142	- .5777329	.0447648
		Spanish, Mexican, Cuban, Central or South American	.02012820	.21762559	1.000	- .6025059	.6427623	
		African American/Black	- .11752994	.20579952	.993	- .7063293	.4712694	
		Asian (i.e. Chines, Japanese,	.37641360	.11668336	.017	- .7102486	- .0425786	

	Korean, or Philippine)					
	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	- .27254288	.2134165 0	.798	-.8831346	.3380489
Indian Sub- continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	Caucasian/Whi te (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	.26648406	.1087889 5	.142	-.0447648	.5777329
	Spanish, Mexican, Cuban, Central or South American	.28661225	.2189331 4	.780	-.3397628	.9129873
	African American/Black	.14895412	.2071817 2	.980	-.4437997	.7417079
	Asian (i.e. Chines, Japanese, Korean, or Philippine)	- .10992955	.1191042 7	.941	-.4506909	.2308318

	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	- .00605882	.2147496 8	1.00 0	-.6204648	.6083472
Spanish, Mexican, Cuban, Central or South American	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	- .02012820	.2176255 9	1.00 0	-.6427623	.6025059
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	- .28661225	.2189331 4	.780	-.9129873	.3397628
	African American/Black	- .13765813	.2800895 0	.996	-.9390036	.6636873
	Asian (i.e. Chinese, Japanese, Korean, or Philippine)	- .39654180	.2229611 8	.481	- 1.034441 2	.2413576

	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	- .29267108	.2857328 9	.910	- 1.110162 4	.5248203
African American/Black	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East)	.11752994	.2057995 2	.993	-.4712694	.7063293
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	- .14895412	.2071817 2	.980	-.7417079	.4437997
	Spanish, Mexican, Cuban, Central or South American	.13765813	.2800895 0	.996	-.6636873	.9390036
	Asian (i.e. Chinese, Japanese, Korean, or Philippine)	- .25888367	.2114337 6	.825	-.8638027	.3460354

	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	.15501294	.27683177	.993	-.9470379	.6370120
Asian (i.e. Chinese, Japanese, Korean, or Philippine)	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	.37641360*	.11668336	.017	.0425786	.7102486
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	.10992955	.11910427	.941	-.2308318	.4506909
	Spanish, Mexican, Cuban, Central or South American	.39654180	.22296118	.481	-.2413576	1.0344412
	African American/Black	.25888367	.21143376	.825	-.3460354	.8638027

	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	.10387072	.2188547 3	.997	-.5222800	.7300214
American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	.27254288	.2134165 0	.798	-.3380489	.8831346
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	.00605882	.2147496 8	1.00 0	-.6083472	.6204648
	Spanish, Mexican, Cuban, Central or South American	.29267108	.2857328 9	.910	-.5248203	1.110162 4
	African American/Black	.15501294	.2768317 7	.993	-.6370120	.9470379
	Asian (i.e. Chinese, Japanese, Korean, or Philippine)	- .10387072	.2188547 3	.997	-.7300214	.5222800

Games - Howell	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East)	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	.26648406	.10918057	.146	-.5796276	.0466594
		Spanish, Mexican, Cuban, Central or South American	.02012820	.21484104	1.000	-.6385028	.6787592
	African American/Black		.11752994	.19339944	.990	-.7028080	.4677481
		Asian (i.e. Chinese, Japanese, Korean, or Philippine)	.37641360*	.11618750	.017	-.7102129	-.0426143
		American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	.27254288	.21412348	.797	-.9267101	.3816243
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East)	.26648406	.10918057	.146	-.0466594	.5796276
		Spanish, Mexican, Cuban, Central	.28661225	.21775489	.774	-.3784519	.9516764



	or South American					
	African American/Black	.14895412	.19663129	.973	-.4438960	.7418043
	Asian (i.e. Chinese, Japanese, Korean, or Philippine)	- .10992955	.12149096	.945	-.4588762	.2390171
	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	- .00605882	.21704696	1.000	-.6667811	.6546634
Spanish, Mexican, Cuban, Central or South American	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	- .02012820	.21484104	1.000	-.6787592	.6385028
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	- .28661225	.21775489	.774	-.9516764	.3784519
	African American/Black	- .13765813	.27000026	.996	-.9423994	.6670831
	Asian (i.e. Chinese, Japanese,	- .39654180	.22135114	.486	- 1.0697672	.2766836

	Korean, or Philippine)					
	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	- .29267108	.2852116 0	.907	- 1.143203 6	.5578614
African American/Black	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	.11752994	.1933994 4	.990	-.4677481	.7028080
	Indian Sub- continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	- .14895412	.1966312 9	.973	-.7418043	.4438960
	Spanish, Mexican, Cuban, Central or South American	.13765813	.2700002 6	.996	-.6670831	.9423994
	Asian (i.e. Chines, Japanese, Korean, or Philippine)	- .25888367	.2006065 8	.788	-.8612998	.3435325

	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	.15501294	.26942964	.992	-.9569448	.6469189
Asian (i.e. Chinese, Japanese, Korean, or Philippine)	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	.37641360*	.11618750	.017	.0426143	.7102129
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	.10992955	.12149096	.945	-.2390171	.4588762
	Spanish, Mexican, Cuban, Central or South American	.39654180	.22135114	.486	-.2766836	1.0697672
	African American/Black	.25888367	.20060658	.788	-.3435325	.8612998

	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	.10387072	.22065476	.997	-.5651556	.7728971
American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East)	.27254288	.21412348	.797	-.3816243	.9267101
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	.00605882	.21704696	1.000	-.6546634	.6667811
	Spanish, Mexican, Cuban, Central or South American	.29267108	.28521160	.907	-.5578614	1.1432036
	African American/Black	.15501294	.26942964	.992	-.6469189	.9569448
	Asian (i.e. Chinese, Japanese, Korean, or Philippine)	-.10387072	.22065476	.997	-.7728971	.5651556

REGR factor score 1 for analysis 3	Tukey HSD	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	.06183130	.10917441	.993	-.2505203	.3741829		
			Spanish, Mexican, Cuban, Central or South American	.06671039	.21839668	1.000	-.5581298	.6915506		
			African American/Black	.21782312	.20652871	.899	-.3730624	.8087087		
			Asian (i.e. Chinese, Japanese, Korean, or Philippine)	.21936666	.11709679	.420	-.5543845	.1156512		
				American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	-	.21417268	.999	-.6902281	.5352823	
					.07747289					
				Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	.06183130	.10917441	.993	-.3741829	.2505203
					Spanish, Mexican, Cuban, Central	.00487909	.21970887	1.000	-.6237153	.6334735

	or South American					
	African American/Black	.1559918 3	.2079158 1	.975	-.4388623	.7508459
	Asian (i.e. Chines, Japanese, Korean, or Philippine)	- .2811979 6	.1195262 8	.175	-.6231667	.0607707
	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	- .1393041 9	.2155105 8	.987	-.7558872	.4772788
Spanish, Mexican, Cuban, Central or South American	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	- .0667103 9	.2183966 8	1.00 0	-.6915506	.5581298
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	- .0048790 9	.2197088 7	1.00 0	-.6334735	.6237153
	African American/Black	.1511127 3	.2810819 1	.995	-.6530720	.9552975
	Asian (i.e. Chines, Japanese,	- .2860770 5	.2237511 8	.797	-.9262367	.3540826

	Korean, or Philippine)					
	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	- .1441832 8	.2867453 1	.996	-.9645712	.6762046
African American/Black	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	- .2178231 2	.2065287 1	.899	-.8087087	.3730624
	Indian Sub- continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	- .1559918 3	.2079158 1	.975	-.7508459	.4388623
	Spanish, Mexican, Cuban, Central or South American	- .1511127 3	.2810819 1	.995	-.9552975	.6530720
	Asian (i.e. Chines, Japanese, Korean, or Philippine)	- .4371897 8	.2121829 2	.310	- 1.044252 2	.1698726

	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	.2952960 2	.2778126 5	.896	1.090127 3	.4995353
Asian (i.e. Chinese, Japanese, Korean, or Philippine)	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	.2193666 6	.1170967 9	.420	-.1156512	.5543845
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	.2811979 6	.1195262 8	.175	-.0607707	.6231667
	Spanish, Mexican, Cuban, Central or South American	.2860770 5	.2237511 8	.797	-.3540826	.9262367
	African American/Black	.4371897 8	.2121829 2	.310	-.1698726	1.044252 2



	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	.1418937 7	.2196301 8	.987	-.4864755	.7702631
American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	.0774728 9	.2141726 8	.999	-.5352823	.6902281
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	.1393041 9	.2155105 8	.987	-.4772788	.7558872
	Spanish, Mexican, Cuban, Central or South American	.1441832 8	.2867453 1	.996	-.6762046	.9645712
	African American/Black	.2952960 2	.2778126 5	.896	-.4995353	1.090127 3
	Asian (i.e. Chinese, Japanese, Korean, or Philippine)	.1418937 7	.2196301 8	.987	-.7702631	.4864755

Games - Howell	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	.0618313 0	.1085193 8	.993	-.2494457	.3731083
		Spanish, Mexican, Cuban, Central or South American	.0667103 9	.1839826 8	.999	-.4943963	.6278171
	African American/Black		.2178231 2	.2000585 4	.882	-.3890608	.8247071
		Asian (i.e. Chinese, Japanese, Korean, or Philippine)	- .2193666 6	.1170580 9	.421	-.5557849	.1170516
		American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	- .0774728 9	.2342936 0	.999	-.7960893	.6411435
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	- .0618313 0	.1085193 8	.993	-.3731083	.2494457
		Spanish, Mexican, Cuban, Central	.0048790 9	.1886913 7	1.00 0	-.5669637	.5767218

	or South American					
	African American/Black	.1559918 3	.2043972 3	.972	-.4609659	.7729496
	Asian (i.e. Chinese, Japanese, Korean, or Philippine)	- .2811979 6	.1243278 0	.214	-.6383156	.0759197
	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	- .1393041 9	.2380090 3	.991	-.8660983	.5874899
Spanish, Mexican, Cuban, Central or South American	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	- .0667103 9	.1839826 8	.999	-.6278171	.4943963
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	- .0048790 9	.1886913 7	1.00 0	-.5767218	.5669637
	African American/Black	.1511127 3	.2526883 4	.991	-.6009120	.9031374
	Asian (i.e. Chinese, Japanese,	- .2860770 5	.1937280 9	.681	-.8698493	.2976952

	Korean, or Philippine)					
	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	- .1441832 8	.2805734 6	.995	-.9831326	.6947660
African American/Black	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	- .2178231 2	.2000585 4	.882	-.8247071	.3890608
	Indian Sub- continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	- .1559918 3	.2043972 3	.972	-.7729496	.4609659
	Spanish, Mexican, Cuban, Central or South American	- .1511127 3	.2526883 4	.991	-.9031374	.6009120
	Asian (i.e. Chines, Japanese, Korean, or Philippine)	- .4371897 8	.2090558 9	.314	- 1.065299 9	.1909203

	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	- .2952960 2	.2913679 2	.911	- 1.163349 1	.5727571
Asian (i.e. Chinese, Japanese, Korean, or Philippine)	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	.2193666 6	.1170580 9	.421	-.1170516	.5557849
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	.2811979 6	.1243278 0	.214	-.0759197	.6383156
	Spanish, Mexican, Cuban, Central or South American	.2860770 5	.1937280 9	.681	-.2976952	.8698493
	African American/Black	.4371897 8	.2090558 9	.314	-.1909203	1.065299 9

	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	.1418937 7	.2420215 6	.991	-.5939849	.8777724
American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East)	.0774728 9	.2342936 0	.999	-.6411435	.7960893
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	.1393041 9	.2380090 3	.991	-.5874899	.8660983
	Spanish, Mexican, Cuban, Central or South American	.1441832 8	.2805734 6	.995	-.6947660	.9831326
	African American/Black	.2952960 2	.2913679 2	.911	-.5727571	1.163349 1
	Asian (i.e. Chinese, Japanese, Korean, or Philippine)	.1418937 7	.2420215 6	.991	-.8777724	.5939849

REGR factor score 1 for analysis 4	Tukey HSD	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	-	.10834447	.980	-.3879160	.2320383
			Spanish, Mexican, Cuban, Central or South American	.07793885	.21673644	.998	-.5281971	.7119833
			African American/Black	.09189310	.20495869	1.000	-.5347181	.6380692
			Asian (i.e. Chinese, Japanese, Korean, or Philippine)	.05167555	.11620662	.013	-.7167073	-.0517652
		American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)		-	.21254454	.990	-.7382141	.4779800
			Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	.13011703	.10834447	.980	-.2320383	.3879160
			Spanish, Mexican, Cuban, Central	.07793885	.21803864	.971	-.4539839	.7936478

	or South American					
	African American/Black	.12961440	.20633524	.989	-.4607176	.7199464
	Asian (i.e. Chines, Japanese, Korean, or Philippine)	-.30629739	.11861765	.104	-.6456665	.0330717
	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	-.05217817	.21387228	1.000	-.6640739	.5597176
Spanish, Mexican, Cuban, Central or South American	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	-.09189310	.21673644	.998	-.7119833	.5281971
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	-.16983196	.21803864	.971	-.7936478	.4539839
	African American/Black	-.04021755	.27894514	1.000	-.8382889	.7578538
	Asian (i.e. Chines, Japanese,	-.47612935	.22205023	.266	1.1114225	.1591638



	Korean, or Philippine)					
	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	- .22201013	.2845654 8	.971	- 1.036161 5	.5921412
African American/Black	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	- .05167555	.2049586 9	1.00 0	-.6380692	.5347181
	Indian Sub- continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	- .12961440	.2063352 4	.989	-.7199464	.4607176
	Spanish, Mexican, Cuban, Central or South American	.04021755	.2789451 4	1.00 0	-.7578538	.8382889
	Asian (i.e. Chines, Japanese, Korean, or Philippine)	- .43591180	.2105699 1	.305	- 1.038359 3	.1665358

	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	.18179258	- .2757007 2	.986	-.9705816	.6069964
Asian (i.e. Chinese, Japanese, Korean, or Philippine)	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	.38423625*	.1162066 2	.013	.0517652	.7167073
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	.30629739	.1186176 5	.104	-.0330717	.6456665
	Spanish, Mexican, Cuban, Central or South American	.47612935	.2220502 3	.266	-.1591638	1.111422 5
	African American/Black	.43591180	.2105699 1	.305	-.1665358	1.038359 3

	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	.25411922	.21796056	.853	-.3694732	.8777117
American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	.13011703	.21254454	.990	-.4779800	.7382141
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	.05217817	.21387228	1.000	-.5597176	.6640739
	Spanish, Mexican, Cuban, Central or South American	.22201013	.28456548	.971	-.5921412	1.0361615
	African American/Black	.18179258	.27570072	.986	-.6069964	.9705816
	Asian (i.e. Chinese, Japanese, Korean, or Philippine)	-.25411922	.21796056	.853	-.8777117	.3694732

Games - Howell	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East)	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	.07793885	.11167179	.982	-.3982391	.2423614
		Spanish, Mexican, Cuban, Central or South American	.09189310	.20210591	.997	-.5258676	.7096538
	African American/Black		.05167555	.19398557	1.000	-.5351550	.6385061
		Asian (i.e. Chinese, Japanese, Korean, or Philippine)	.38423625*	.11359500	.011	-.7104903	-.0579821
		American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	.13011703	.19404883	.984	-.7203493	.4601153
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East)	.07793885	.11167179	.982	-.2423614	.3982391
		Spanish, Mexican, Cuban, Central	.16983196	.20587665	.961	-.4564021	.7960660

	or South American					
	African American/Black	.12961440	.19791107	.986	-.4664433	.7256721
	Asian (i.e. Chinese, Japanese, Korean, or Philippine)	-.30629739	.12017577	.114	-.6513880	.0387932
	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	-.05217817	.19797308	1.000	-.6514309	.5470745
Spanish, Mexican, Cuban, Central or South American	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	-.09189310	.20210591	.997	-.7096538	.5258676
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	-.16983196	.20587665	.961	-.7960660	.4564021
	African American/Black	-.04021755	.25989422	1.000	-.8140990	.7336639
	Asian (i.e. Chinese, Japanese,	-.47612935	.20692614	.225	1.1048269	.1525682

	Korean, or Philippine)					
	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	- .22201013	.2599414 4	.955	-.9973340	.5533138
African American/Black	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	- .05167555	.1939855 7	1.00 0	-.6385061	.5351550
	Indian Sub- continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	- .12961440	.1979110 7	.986	-.7256721	.4664433
	Spanish, Mexican, Cuban, Central or South American	.04021755	.2598942 2	1.00 0	-.7336639	.8140990
	Asian (i.e. Chines, Japanese, Korean, or Philippine)	- .43591180	.1990025 8	.267	- 1.034646 0	.1628224

	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	.18179258	-.25367923	.979	-.9360844	.5724992
Asian (i.e. Chinese, Japanese, Korean, or Philippine)	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	.38423625*	.11359500	.011	.0579821	.7104903
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	.30629739	.12017577	.114	-.0387932	.6513880
	Spanish, Mexican, Cuban, Central or South American	.47612935	.20692614	.225	-.1525682	1.1048269
	African American/Black	.43591180	.19900258	.267	-.1628224	1.0346460

	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	.25411922	.19906425	.795	-.3477561	.8559945
American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East)	.13011703	.19404883	.984	-.4601153	.7203493
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	.05217817	.19797308	1.000	-.5470745	.6514309
	Spanish, Mexican, Cuban, Central or South American	.22201013	.25994144	.955	-.5533138	.9973340
	African American/Black	.18179258	.25367923	.979	-.5724992	.9360844
	Asian (i.e. Chinese, Japanese, Korean, or Philippine)	-.25411922	.19906425	.795	-.8559945	.3477561



REGR factor score 1 for analysis 5	Tukey HSD	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	-.26320314	.10967520	.158	-.5769875	.0505813
			Spanish, Mexican, Cuban, Central or South American	.10573412	.21939848	.997	-.5219723	.7334405
			African American/Black	-.04429883	.20747607	1.000	-.6378948	.5492971
			Asian (i.e. Chinese, Japanese, Korean, or Philippine)	-.45188320*	.11763392	.002	-.7884378	-.1153286
			American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	-.38198685	.21515510	.483	-.9975528	.2335791
			Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	.26320314	.10967520	.158	-.0505813	.5769875
			Spanish, Mexican, Cuban, Central	.36893725	.22071668	.551	-.2625406	1.0004151

	or South American					
	African American/Black	.21890431	.20886953	.901	-.3786784	.8164870
	Asian (i.e. Chines, Japanese, Korean, or Philippine)	-.18868006	.12007456	.618	-.5322174	.1548573
	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	-.11878371	.21649914	.994	-.7381950	.5006276
Spanish, Mexican, Cuban, Central or South American	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	-.10573412	.21939848	.997	-.7334405	.5219723
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	-.36893725	.22071668	.551	1.0004151	.2625406
	African American/Black	-.15003295	.28237125	.995	-.9579065	.6578406
	Asian (i.e. Chines, Japanese,	-.55761732	.22477754	.132	1.2007134	.0854787

	Korean, or Philippine)					
	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	- .48772097	.2880606 2	.537	- 1.311872 0	.3364301
African American/Black	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	.04429883	.2074760 7	1.00 0	-.5492971	.6378948
	Indian Sub- continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	- .21890431	.2088695 3	.901	-.8164870	.3786784
	Spanish, Mexican, Cuban, Central or South American	.15003295	.2823712 5	.995	-.6578406	.9579065
	Asian (i.e. Chines, Japanese, Korean, or Philippine)	- .40758437	.2131562 1	.396	- 1.017431 4	.2022627

	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	.33768802	.27908699	.832	1.1361652	.4607892
Asian (i.e. Chinese, Japanese, Korean, or Philippine)	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	.45188320*	.11763392	.002	.1153286	.7884378
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	.18868006	.12007456	.618	-.1548573	.5322174
	Spanish, Mexican, Cuban, Central or South American	.55761732	.22477754	.132	-.0854787	1.2007134
	African American/Black	.40758437	.21315621	.396	-.2022627	1.0174314

	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	.06989635	.22063764	1.000	-.5613553	.7011480
American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	.38198685	.21515510	.483	-.2335791	.9975528
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	.11878371	.21649914	.994	-.5006276	.7381950
	Spanish, Mexican, Cuban, Central or South American	.48772097	.28806062	.537	-.3364301	1.3118720
	African American/Black	.33768802	.27908699	.832	-.4607892	1.1361652
	Asian (i.e. Chinese, Japanese, Korean, or Philippine)	-.06989635	.22063764	1.000	-.7011480	.5613553

Games - Howell	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East)	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	- .26320314	.1126374 3	.183	-.5862485	.0598422
		Spanish, Mexican, Cuban, Central or South American	.10573412	.2204756 8	.997	-.5697208	.7811891
		African American/Black	- .04429883	.2138040 6	1.00 0	-.6927031	.6041054
		Asian (i.e. Chinese, Japanese, Korean, or Philippine)	- .45188320	.1142025 9	.001	-.7798183	- .1239481
		American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	- .38198685	.1916691 5	.369	-.9638565	.1998828
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East)	.26320314	.1126374 3	.183	-.0598422	.5862485
		Spanish, Mexican, Cuban, Central	.36893725	.2228729 3	.571	-.3118208	1.049695 4

	or South American					
	African American/Black	.21890431	.21627527	.911	-.4352192	.8730279
	Asian (i.e. Chinese, Japanese, Korean, or Philippine)	-.18868006	.11876466	.607	-.5297148	.1523547
	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	-.11878371	.19442191	.989	-.7070238	.4694563
Spanish, Mexican, Cuban, Central or South American	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	-.10573412	.22047568	.997	-.7811891	.5697208
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	-.36893725	.22287293	.571	1.0496954	.3118208
	African American/Black	-.15003295	.28757143	.995	1.0062265	.7061606

	Asian (i.e. Chines, Japanese, Korean, or Philippine)	- .55761732	.2236680 1	.160	- 1.240203 1	.1249685
	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	- .48772097	.2715183 5	.479	- 1.298646 8	.3232049
African American/Black	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	.04429883	.2138040 6	1.00 0	-.6041054	.6927031
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	- .21890431	.2162752 7	.911	-.8730279	.4352192
	Spanish, Mexican, Cuban, Central or South American	.15003295	.2875714 3	.995	-.7061606	1.006226 5
	Asian (i.e. Chines, Japanese, Korean, or Philippine)	- .40758437	.2170945 2	.433	- 1.063675 7	.2485069



	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	.33768802	-.26612941	.800	1.1291683	.4537922
Asian (i.e. Chinese, Japanese, Korean, or Philippine)	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	.45188320*	.11420259	.001	.1239481	.7798183
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	.18868006	.11876466	.607	-.1523547	.5297148
	Spanish, Mexican, Cuban, Central or South American	.55761732	.22366801	.160	-.1249685	1.2402031
	African American/Black	.40758437	.21709452	.433	-.2485069	1.0636757

	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	.06989635	.19533284	.999	-.5205501	.6603428
American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	.38198685	.19166915	.369	-.1998828	.9638565
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	.11878371	.19442191	.989	-.4694563	.7070238
	Spanish, Mexican, Cuban, Central or South American	.48772097	.27151835	.479	-.3232049	1.2986468
	African American/Black	.33768802	.26612941	.800	-.4537922	1.1291683
	Asian (i.e. Chinese, Japanese, Korean, or Philippine)	.06989635	.19533284	.999	-.6603428	.5205501

REGR factor score 1 for analyses 6	Tukey HSD	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	.67079987 *	.10831104	.000	.3609184	.9806814
			Spanish, Mexican, Cuban, Central or South American	.02299138	.21666956	1.000	-.5969075	.6428902
			African American/Black	.23140055	.20489544	.869	-.3548122	.8176133
			Asian (i.e. Chinese, Japanese, Korean, or Philippine)	.33846255 *	.11617077	.043	.0060941	.6708310
			American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	.67257302 *	.21247896	.020	.0646636	1.2804824
			Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	.67079987 *	.10831104	.000	-.9806814	-.3609184
		Spanish, Mexican, Cuban, Central	.64780849 *	.21797136	.036	1.2714319	-.0241851	

	or South American					
	African American/Black	- .43939932	.2062715 7	.273	- 1.029549 2	.1507505
	Asian (i.e. Chinese, Japanese, Korean, or Philippine)	- .33233732	.1185810 5	.059	-.6716017	.0069270
	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	.00177315	.2138062 8	1.00 0	-.6099338	.6134801
Spanish, Mexican, Cuban, Central or South American	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	- .02299138	.2166695 6	1.00 0	-.6428902	.5969075
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	.64780849 *	.2179713 6	.036	.0241851	1.271431 9
	African American/Black	.20840917	.2788590 6	.976	-.5894159	1.006234 3
	Asian (i.e. Chinese, Japanese,	.31547118	.2219817 1	.714	-.3196259	.9505683

	Korean, or Philippine)					
	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	.64958164	.2844776 7	.203	-.1643185	1.463481 8
African American/Black	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	- .23140055	.2048954 4	.869	-.8176133	.3548122
	Indian Sub- continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	.43939932	.2062715 7	.273	-.1507505	1.029549 2
	Spanish, Mexican, Cuban, Central or South American	- .20840917	.2788590 6	.976	- 1.006234 3	.5894159
	Asian (i.e. Chines, Japanese, Korean, or Philippine)	.10706200	.2105049 3	.996	-.4951996	.7093237

	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	.44117247	.2756156 5	.598	-.3473731	1.229718 1
Asian (i.e. Chinese, Japanese, Korean, or Philippine)	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	- .33846255	.1161707 7	.043	-.6708310	- .0060941
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	.33233732	.1185810 5	.059	-.0069270	.6716017
	Spanish, Mexican, Cuban, Central or South American	- .31547118	.2219817 1	.714	-.9505683	.3196259
	African American/Black	- .10706200	.2105049 3	.996	-.7093237	.4951996

	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	.33411046	.21789330	.643	-.2892896	.9575105
American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	-.67257302*	.21247896	.020	1.2804824	-.0646636
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	-.00177315	.21380628	1.000	-.6134801	.6099338
	Spanish, Mexican, Cuban, Central or South American	-.64958164	.28447767	.203	1.4634818	.1643185
	African American/Black	-.44117247	.27561565	.598	1.2297181	.3473731
	Asian (i.e. Chinese, Japanese, Korean, or Philippine)	-.33411046	.21789330	.643	-.9575105	.2892896

Games - Howell	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	.67079987 *	.1078285 1	.000	.3613240	.9802758
		Spanish, Mexican, Cuban, Central or South American	.02299138	.2237594 4	1.00 0	-.6670977	.7130804
		African American/Black	.23140055	.2162657 2	.889	-.4284351	.8912362
		Asian (i.e. Chinese, Japanese, Korean, or Philippine)	.33846255 *	.1104585 9	.029	.0208380	.6560871
		American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	.67257302 *	.2074328 5	.034	.0364846	1.308661 4
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	-.67079987 *	.1078285 1	.000	-.9802758	-.3613240
		Spanish, Mexican, Cuban, Central	-.64780849	.2317762 7	.088	1.355338 1	.0597211



	or South American					
	African American/Black	- .43939932	.2245502 5	.388	- 1.118134 6	.2393360
	Asian (i.e. Chinese, Japanese, Korean, or Philippine)	- .33233732	.1259089 1	.092	-.6938964	.0292217
	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	.00177315	.2160563 4	1.00 0	-.6536316	.6571779
Spanish, Mexican, Cuban, Central or South American	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	- .02299138	.2237594 4	1.00 0	-.7130804	.6670977
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	.64780849	.2317762 7	.088	-.0597211	1.355338 1
	African American/Black	.20840917	.2981008 4	.981	-.6791503	1.095968 7
	Asian (i.e. Chinese, Japanese,	.31547118	.2330114 8	.753	-.3948865	1.025828 8

	Korean, or Philippine)					
	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	.64958164	.2917561 3	.247	-.2208839	1.520047 2
African American/Black	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	- .23140055	.2162657 2	.889	-.8912362	.4284351
	Indian Sub- continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	.43939932	.2245502 5	.388	-.2393360	1.118134 6
	Spanish, Mexican, Cuban, Central or South American	- .20840917	.2981008 4	.981	- 1.095968 7	.6791503
	Asian (i.e. Chines, Japanese, Korean, or Philippine)	.10706200	.2258249 9	.997	-.5747221	.7888461

	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	.44117247	.2860493 2	.639	-.4092992	1.291644 1
Asian (i.e. Chinese, Japanese, Korean, or Philippine)	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	- .33846255	.1104585 9	.029	-.6560871	- .0208380
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	.33233732	.1259089 1	.092	-.0292217	.6938964
	Spanish, Mexican, Cuban, Central or South American	- .31547118	.2330114 8	.753	- 1.025828 8	.3948865
	African American/Black	- .10706200	.2258249 9	.997	-.7888461	.5747221

	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	.33411046	.21738089	.644	-.3244250	.9926459
American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	-.67257302*	.20743285	.034	1.3086614	-.0364846
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	-.00177315	.21605634	1.000	-.6571779	.6536316
	Spanish, Mexican, Cuban, Central or South American	-.64958164	.29175613	.247	1.5200472	.2208839
	African American/Black	-.44117247	.28604932	.639	1.2916441	.4092992
	Asian (i.e. Chines, Japanese, Korean, or Philippine)	-.33411046	.21738089	.644	-.9926459	.3244250

REGR factor score 1 for analysis 7	Tukey HSD	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	.1449584 4	.1106449 2	.779	-.1716004	.4615173
			Spanish, Mexican, Cuban, Central or South American	.3136310 0	.2213383 5	.717	-.3196254	.9468874
			African American/Black	.0829108 6	.2093105 2	.999	-.5159335	.6817553
			Asian (i.e. Chinese, Japanese, Korean, or Philippine)	- .1984848 0	.1186740 1	.551	-.5380151	.1410455
			American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	.0789411 5	.2170574 5	.999	-.5420675	.6999498
			Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	- .1449584 4	.1106449 2	.779	-.4615173	.1716004
		Spanish, Mexican, Cuban, Central	.1686725 6	.2226682 0	.974	-.4683886	.8057337	

	or South American					
	African American/Black	-.06204758	.21071630	1.000	-.6649140	.5408188
	Asian (i.e. Chinese, Japanese, Korean, or Philippine)	-.34344324	.12113623	.054	-.6900180	.0031316
	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	-.06601729	.21841337	1.000	-.6909053	.5588707
Spanish, Mexican, Cuban, Central or South American	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	-.31363100	.22133835	.717	-.9468874	.3196254
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	-.16867256	.22266820	.974	-.8057337	.4683886
	African American/Black	-.23072014	.28486791	.966	1.0457368	.5842965

	Asian (i.e. Chinese, Japanese, Korean, or Philippine)	- .5121158 0	.2267649 7	.213	- 1.160898 0	.1366664
	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	- .2346898 5	.2906075 8	.966	- 1.066127 9	.5967482
African American/Black	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East)	- .0829108 6	.2093105 2	.999	-.6817553	.5159335
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	.0620475 8	.2107163 0	1.00 0	-.5408188	.6649140
	Spanish, Mexican, Cuban, Central or South American	.2307201 4	.2848679 1	.966	-.5842965	1.045736 8
	Asian (i.e. Chinese, Japanese, Korean, or Philippine)	- .2813956 6	.2150408 8	.780	-.8966348	.3338435

	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	.0039697 1	.2815546 1	1.00 0	-.8095069	.8015674
Asian (i.e. Chinese, Japanese, Korean, or Philippine)	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	.1984848 0	.1186740 1	.551	-.1410455	.5380151
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	.3434432 4	.1211362 3	.054	-.0031316	.6900180
	Spanish, Mexican, Cuban, Central or South American	.5121158 0	.2267649 7	.213	-.1366664	1.160898 0
	African American/Black	.2813956 6	.2150408 8	.780	-.3338435	.8966348



	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	.2774259 5	.2225884 6	.814	-.3594071	.9142590
American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	-.0789411 5	.2170574 5	.999	-.6999498	.5420675
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	.0660172 9	.2184133 7	1.00 0	-.5588707	.6909053
	Spanish, Mexican, Cuban, Central or South American	.2346898 5	.2906075 8	.966	-.5967482	1.066127 9
	African American/Black	.0039697 1	.2815546 1	1.00 0	-.8015674	.8095069
	Asian (i.e. Chinese, Japanese, Korean, or Philippine)	-.2774259 5	.2225884 6	.814	-.9142590	.3594071

Games - Howell	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	.1449584 4	.1117381 5	.786	-.1754975	.4654144
		Spanish, Mexican, Cuban, Central or South American	.3136310 0	.2089220 1	.666	-.3249446	.9522066
		African American/Black	.0829108 6	.2031736 9	.998	-.5320140	.6978358
		Asian (i.e. Chinese, Japanese, Korean, or Philippine)	- .1984848 0	.1185684 6	.550	-.5390480	.1420784
		American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	.0789411 5	.2136635 9	.999	-.5726276	.7305099
		Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East)	- .1449584 4	.1117381 5	.786	-.4654144
		Spanish, Mexican, Cuban, Central	.1686725 6	.2107967 0	.965	-.4740973	.8114424

	or South American					
	African American/Black	-.06204758	.20510093	1.000	-.6814749	.5573798
	Asian (i.e. Chinese, Japanese, Korean, or Philippine)	-.34344324	.12184138	.058	-.6933951	.0065086
	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	-.06601729	.21549704	1.000	-.7217264	.5896918
Spanish, Mexican, Cuban, Central or South American	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	-.31363100	.20892201	.666	-.9522066	.3249446
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	-.16867256	.21079670	.965	-.8114424	.4740973
	African American/Black	-.23072014	.27060928	.956	1.0363928	.5749526

	Asian (i.e. Chinese, Japanese, Korean, or Philippine)	- .5121158 0	.2144954 8	.192	- 1.163354 9	.1391233
	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	- .2346898 5	.2785712 9	.958	- 1.065392 8	.5960131
African American/Black	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East)	- .0829108 6	.2031736 9	.998	-.6978358	.5320140
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	.0620475 8	.2051009 3	1.00 0	-.5573798	.6814749
	Spanish, Mexican, Cuban, Central or South American	.2307201 4	.2706092 8	.956	-.5749526	1.036392 8
	Asian (i.e. Chinese, Japanese, Korean, or Philippine)	- .2813956 6	.2089005 9	.757	-.9098857	.3470944

	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	.0039697 1	.2742865 4	1.00 0	-.8198277	.8118883
Asian (i.e. Chinese, Japanese, Korean, or Philippine)	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	.1984848 0	.1185684 6	.550	-.1420784	.5390480
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	.3434432 4	.1218413 8	.058	-.0065086	.6933951
	Spanish, Mexican, Cuban, Central or South American	.5121158 0	.2144954 8	.192	-.1391233	1.163354 9
	African American/Black	.2813956 6	.2089005 9	.757	-.3470944	.9098857

	American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	.2774259 5	.2191164 9	.801	-.3866344	.9414863
American Indian or Alaskan Native (i.e. persons having origins in any of the original peoples of North American, and who maintain cultural identification through tribal affiliation or community recognition)	Caucasian/White (i.e. a person having origins in any of the original people of Europe (except Spain and Portugal), North Africa or the Middle East	-.0789411 5	.2136635 9	.999	-.7305099	.5726276
	Indian Sub-continent (i.e. Afghanistan, Bangladesh, Ceylon, India, Nepal, Pakistan or Sri Lanka)	.0660172 9	.2154970 4	1.00 0	-.5896918	.7217264
	Spanish, Mexican, Cuban, Central or South American	.2346898 5	.2785712 9	.958	-.5960131	1.065392 8
	African American/Black	.0039697 1	.2742865 4	1.00 0	-.8118883	.8198277
	Asian (i.e. Chinese, Japanese, Korean, or Philippine)	-.2774259 5	.2191164 9	.801	-.9414863	.3866344

**Appendix J**  
**Correlations - Gender**

Gender			REGR factor score 1 for analysis 1	REGR factor score 1 for analysis 2	REGR factor score 1 for analysis 3	REGR factor score 1 for analysis 4	REGR factor score 1 for analysis 5	REGR factor score 1 for analysis 6	REGR factor score 1 for analysis 7
.	REGR factor score 1 for analysis 1	Pearson Correlation	1	.938**	.931**	.971**	.830**	.553	.985**
		Sig. (2- tailed)		.000	.000	.000	.006	.155	.000
		N	15	14	11	11	9	8	7
	REGR factor score 1 for analysis 2	Pearson Correlation	0.938	1	.970**	.923**	.764*	.511	.979**
		Sig. (2- tailed)	.000		.000	.000	.016	.196	.000
		N	14	14	11	11	9	8	7
	REGR factor score 1 for analysis 3	Pearson Correlation	0.931	0.97	1	.880**	.737*	.561	.985**
		Sig. (2- tailed)	.000	.000		.000	.023	.148	.000
		N	11	11	11	11	9	8	7
	REGR factor score 1 for analysis 4	Pearson Correlation	0.971	0.923	0.88	1	.831**	.560	.988**
		Sig. (2- tailed)	.000	.000	.000		.006	.149	.000
		N	11	11	11	11	9	8	7
	REGR factor score 1 for analysis 5	Pearson Correlation	0.83	0.764	0.737	0.831	1	.849**	.754
		Sig. (2- tailed)	.006	.016	.023	.006		.008	.050
		N	9	9	9	9	9	8	7
	REGR factor score 1 for analysis 6	Pearson Correlation	.553	.511	.561	.560	0.849	1	.495
		Sig. (2- tailed)	.155	.196	.148	.149	.008		.259
		N	8	8	8	8	8	8	7
	REGR factor	Pearson Correlation	0.985	0.979	0.985	0.988	.754	.495	1

	score 1 for analysis 7	Sig. (2- tailed)	.000	.000	.000	.000	.050	.259		
		N	7	7	7	7	7	7	7	
Male	REGR factor score 1 for analysis 1	Pearson Correlation	1	.894**	.858**	.853**	.840**	.623**	.840**	
		Sig. (2- tailed)		.000	.000	.000	.000	.000	.000	
		N	306	306	306	306	306	306	306	
	REGR factor score 1 for analysis 2	Pearson Correlation	0.894	1	.879**	.884**	.886**	.580**	.850**	
		Sig. (2- tailed)	.000		.000	.000	.000	.000	.000	
		N	306	306	306	306	306	306	306	
	REGR factor score 1 for analysis 3	Pearson Correlation	0.858	0.879	1	.873**	.833**	.691**	.867**	
		Sig. (2- tailed)	.000	.000		.000	.000	.000	.000	
		N	306	306	306	306	306	306	306	
	REGR factor score 1 for analysis 4	Pearson Correlation	0.853	0.884	0.873	1	.881**	.655**	.863**	
		Sig. (2- tailed)	.000	.000	.000		.000	.000	.000	
		N	306	306	306	306	306	306	306	
	REGR factor score 1 for analysis 5	Pearson Correlation	0.84	0.886	0.833	0.881	1	.564**	.855**	
		Sig. (2- tailed)	.000	.000	.000	.000		.000	.000	
		N	306	306	306	306	306	306	306	
	REGR factor score 1 for analysis 6	Pearson Correlation	0.623	0.58	0.691	0.655	0.564	1	.695**	
		Sig. (2- tailed)	.000	.000	.000	.000	.000		.000	
		N	306	306	306	306	306	306	306	
	REGR factor score 1 for analysis 7	Pearson Correlation	0.84	0.85	0.867	0.863	0.855	0.695	1	
		Sig. (2- tailed)	.000	.000	.000	.000	.000	.000		
		N	306	306	306	306	306	306	306	
	Female	REGR factor	Pearson Correlation	1	.784**	.657**	.766**	.782**	.330**	.676**



score 1 for analysis 1	Sig. (2- tailed)		.000	.000	.000	.000	.000	.000
	N	190	190	190	190	190	190	190
REGR factor score 1 for analysis 2	Pearson Correlation	0.784	1	.785**	.852**	.874**	.371**	.749**
	Sig. (2- tailed)	.000		.000	.000	.000	.000	.000
	N	190	190	190	190	190	190	190
REGR factor score 1 for analysis 3	Pearson Correlation	0.657	0.785	1	.820**	.798**	.521**	.773**
	Sig. (2- tailed)	.000	.000		.000	.000	.000	.000
	N	190	190	190	190	190	190	190
REGR factor score 1 for analysis 4	Pearson Correlation	0.766	0.852	0.82	1	.882**	.438**	.775**
	Sig. (2- tailed)	.000	.000	.000		.000	.000	.000
	N	190	190	190	190	190	190	190
REGR factor score 1 for analysis 5	Pearson Correlation	0.782	0.874	0.798	0.882	1	.380**	.766**
	Sig. (2- tailed)	.000	.000	.000	.000		.000	.000
	N	190	190	190	190	190	190	190
REGR factor score 1 for analysis 6	Pearson Correlation	0.33	0.371	0.521	0.438	0.38	1	.577**
	Sig. (2- tailed)	.000	.000	.000	.000	.000		.000
	N	190	190	190	190	190	190	190
REGR factor score 1 for analysis 7	Pearson Correlation	0.676	0.749	0.773	0.775	0.766	0.577	1
	Sig. (2- tailed)	.000	.000	.000	.000	.000	.000	
	N	190	190	190	190	190	190	190

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

## Appendix K

### Correlations – Culture/Ethnicity

Generation			REGR factor score 1 for analysis 1	REGR factor score 1 for analysis 2	REGR factor score 1 for analysis 3	REGR factor score 1 for analysis 4	REGR factor score 1 for analysis 5	REGR factor score 1 for analysis 6	REGR factor score 1 for analysis 7
No response	REGR factor score 1 for analysis 1	Pearson Correlation	1	.891**	.913**	.909**	.874**	.611**	.858**
		Sig. (2- tailed)		.000	.000	.000	.000	.000	.000
		N	90	89	86	86	84	83	82
	REGR factor score 1 for analysis 2	Pearson Correlation	0.891	1	.938**	.915**	.846**	.590**	.857**
		Sig. (2- tailed)	.000		.000	.000	.000	.000	.000
		N	89	89	86	86	84	83	82
	REGR factor score 1 for analysis 3	Pearson Correlation	0.913	0.938	1	.916**	.847**	.655**	.897**
		Sig. (2- tailed)	.000	.000		.000	.000	.000	.000
		N	86	86	86	86	84	83	82
	REGR factor score 1 for analysis 4	Pearson Correlation	0.909	0.915	0.916	1	.881**	.621**	.858**
		Sig. (2- tailed)	.000	.000	.000		.000	.000	.000
		N	86	86	86	86	84	83	82
	REGR factor score 1 for analysis 5	Pearson Correlation	0.874	0.846	0.847	0.881	1	.609**	.796**
		Sig. (2- tailed)	.000	.000	.000	.000		.000	.000
		N	84	84	84	84	84	83	82
	REGR factor score 1 for analysis 6	Pearson Correlation	0.611	0.590	0.655	0.621	0.609	1	.755**
		Sig. (2- tailed)	.000	.000	.000	.000	.000		.000
		N	83	83	83	83	83	83	82
	REGR factor	Pearson Correlation	0.858	0.857	0.897	0.858	0.796	0.755	1

	score 1 for analysis 7	Sig. (2- tailed)	.000	.000	.000	.000	.000	.000	.000	
		N	82	82	82	82	82	82	82	
1946-1964	REGR factor score 1 for analysis 1	Pearson Correlation	1	.162	.205	.678**	.551*	.029	.533*	
		Sig. (2- tailed)		.507	.401	.001	.014	.907	.019	
		N	19	19	19	19	19	19	19	
	REGR factor score 1 for analysis 2	Pearson Correlation	.162	1	.455	.466*	.545*	-.260	.363	
		Sig. (2- tailed)	.507		.050	.044	.016	.282	.126	
		N	19	19	19	19	19	19	19	
	REGR factor score 1 for analysis 3	Pearson Correlation	.205	.455	1	.558*	.672**	.312	.675**	
		Sig. (2- tailed)	.401	.050		.013	.002	.194	.002	
		N	19	19	19	19	19	19	19	
	REGR factor score 1 for analysis 4	Pearson Correlation	0.678	0.466	0.558	1	.722**	.159	.681**	
		Sig. (2- tailed)	.001	.044	.013		.000	.515	.001	
		N	19	19	19	19	19	19	19	
	REGR factor score 1 for analysis 5	Pearson Correlation	0.551	0.545	0.672	0.722	1	-.082	.870**	
		Sig. (2- tailed)	.014	.016	.002	.000		.740	.000	
		N	19	19	19	19	19	19	19	
	REGR factor score 1 for analysis 6	Pearson Correlation	.029	-.260	.312	.159	-.082	1	.106	
		Sig. (2- tailed)	.907	.282	.194	.515	.740		.665	
		N	19	19	19	19	19	19	19	
	REGR factor score 1 for analysis 7	Pearson Correlation	0.533	.363	0.675	0.681	0.87	.106	1	
		Sig. (2- tailed)	.019	.126	.002	.001	.000	.665		
		N	19	19	19	19	19	19	19	
	1965-1980	REGR factor	Pearson Correlation	1	.929**	.845**	.879**	.880**	.532**	.836**

score 1 for analysis 1	Sig. (2- tailed)		.000	.000	.000	.000	.000	.000	.000
	N	59	59	59	59	59	59	59	59
REGR factor score 1 for analysis 2	Pearson Correlation	0.929	1	.854**	.888**	.928**	.560**	.857**	
	Sig. (2- tailed)	.000		.000	.000	.000	.000	.000	
	N	59	59	59	59	59	59	59	59
REGR factor score 1 for analysis 3	Pearson Correlation	0.845	0.854	1	.854**	.838**	.622**	.855**	
	Sig. (2- tailed)	.000	.000		.000	.000	.000	.000	
	N	59	59	59	59	59	59	59	59
REGR factor score 1 for analysis 4	Pearson Correlation	0.879	0.888	0.854	1	.927**	.512**	.794**	
	Sig. (2- tailed)	.000	.000	.000		.000	.000	.000	
	N	59	59	59	59	59	59	59	59
REGR factor score 1 for analysis 5	Pearson Correlation	0.88	0.928	0.838	0.927	1	.493**	.833**	
	Sig. (2- tailed)	.000	.000	.000	.000		.000	.000	
	N	59	59	59	59	59	59	59	59
REGR factor score 1 for analysis 6	Pearson Correlation	0.532	0.560	0.622	0.512	0.493	1	.605**	
	Sig. (2- tailed)	.000	.000	.000	.000	.000		.000	
	N	59	59	59	59	59	59	59	59
REGR factor score 1 for analysis 7	Pearson Correlation	0.836	0.857	0.855	0.794	0.833	0.605	1	
	Sig. (2- tailed)	.000	.000	.000	.000	.000	.000		
	N	59	59	59	59	59	59	59	59
1981-1994	REGR factor score 1 for analysis 1	Pearson Correlation	1	.900**	.841**	.855**	.835**	.513**	.837**
		Sig. (2- tailed)		.000	.000	.000	.000	.000	.000
		N	252	252	252	252	252	252	252
	REGR factor	Pearson Correlation	0.9	1	.854**	.872**	.879**	.478**	.843**

score 1 for analysis 2	Sig. (2- tailed)	.000		.000	.000	.000	.000	.000	
	N	252	252	252	252	252	252	252	
REGR factor score 1 for analysis 3	Pearson Correlation	0.841	0.854	1	.856**	.814**	.605**	.820**	
	Sig. (2- tailed)	.000	.000		.000	.000	.000	.000	
	N	252	252	252	252	252	252	252	
REGR factor score 1 for analysis 4	Pearson Correlation	0.855	0.872	0.856	1	.865**	.575**	.856**	
	Sig. (2- tailed)	.000	.000	.000		.000	.000	.000	
	N	252	252	252	252	252	252	252	
REGR factor score 1 for analysis 5	Pearson Correlation	0.835	0.879	0.814	0.865	1	.490**	.834**	
	Sig. (2- tailed)	.000	.000	.000	.000		.000	.000	
	N	252	252	252	252	252	252	252	
REGR factor score 1 for analysis 6	Pearson Correlation	0.513	0.478	0.605	0.575	0.49	1	.616**	
	Sig. (2- tailed)	.000	.000	.000	.000	.000		.000	
	N	252	252	252	252	252	252	252	
REGR factor score 1 for analysis 7	Pearson Correlation	0.837	0.843	0.82	0.856	0.834	0.616	1	
	Sig. (2- tailed)	.000	.000	.000	.000	.000	.000		
	N	252	252	252	252	252	252	252	
After 1995	REGR factor score 1 for analysis 1	Pearson Correlation	1	.724**	.573**	.658**	.696**	.591**	.611**
		Sig. (2- tailed)		.000	.000	.000	.000	.000	.000
		N	91	91	91	91	91	91	91
	REGR factor score 1 for analysis 2	Pearson Correlation	0.724	1	.836**	.867**	.895**	.786**	.809**
		Sig. (2- tailed)	.000		.000	.000	.000	.000	.000
		N	91	91	91	91	91	91	91
	REGR factor	Pearson Correlation	0.573	0.836	1	.850**	.817**	.837**	.880**

score 1 for analysis 3	Sig. (2- tailed)	.000	.000		.000	.000	.000	.000
	N	91	91	91	91	91	91	91
REGR factor score 1 for analysis 4	Pearson Correlation	0.658	0.867	0.85	1	.881**	.821**	.881**
	Sig. (2- tailed)	.000	.000	.000		.000	.000	.000
	N	91	91	91	91	91	91	91
REGR factor score 1 for analysis 5	Pearson Correlation	0.696	0.895	0.817	0.881	1	.748**	.824**
	Sig. (2- tailed)	.000	.000	.000	.000		.000	.000
	N	91	91	91	91	91	91	91
REGR factor score 1 for analysis 6	Pearson Correlation	0.591	0.786	0.837	0.821	0.748	1	.869**
	Sig. (2- tailed)	.000	.000	.000	.000	.000		.000
	N	91	91	91	91	91	91	91
REGR factor score 1 for analysis 7	Pearson Correlation	0.611	0.809	0.88	0.881	0.824	0.869	1
	Sig. (2- tailed)	.000	.000	.000	.000	.000	.000	
	N	91	91	91	91	91	91	91

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).